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UNIVERSITY OF ILLINOIS

News of the Week

BLITZED HALL REBUILT

THE recently completed large hall at the Leysian Mission in City-road, EC1, was the scene of an impressive ceremony on Monday (June 6) when HM Queen Elizabeth the Queen Mother officially opened the hall and took part in its re-dedication as a Methodist Church.

The modern design and construction of the hall provide a sharp contrast to the remainder of the building in which it is housed and in which the Mission has carried on its activities since 1904. Designed by Mr. W. H. Gunton, FRIBA, FRICS, the new building replaces the old hall which was damaged during the war. The high windows along both sides of the hall and above the altar allow plenty of natural light, and a bright colour scheme has been used.

The seating capacity is generous and there is a large raised stage, backed by the altar, which can be reached by six steps in the centre of the hall.

After the ceremony the architect and Mrs. Gunton were presented to Her Majesty as also were Mr. H. J. Falkus (chairman of the building contractors), and Mrs. Falkus, Mr. M. Field (personal assistant to the architect), Mr. P. W. Peacock (general foreman), Mr. R. Ingram (assistant foreman), Mr. T. J. Roberts (timekeeper) and Mr. E. Willson (clerk of works). A moving spirit in the work of the Mission is Mr. P. W. E. Holloway, the chairman, who also is President of the Old Leysian Society.

A JERUSALEM CHURCH

MR. BASIL SPENCE, ARA, left London on Sunday last for Jerusalem, to inspect the Church of the Holy Sepulchre, said to be in danger of structural collapse. He accompanied Mr. C. T. Wolley, of the firm of Freeman, Fox and Partners, the consulting engineers, who are making a report on measures necessary to put the church into a sound structural state.

RECONSTRUCTION

THE rebuilt hall and other buildings at Staple Inn, Holborn, were officially opened by Sir Hartley Shawcross on May 31. The ceremony took place in the courtyard of the Inn. The reconstruction was undertaken by the Prudential Assurance Company, which has owned Staple Inn for about 60 years. The hall and many of the surrounding buildings were destroyed by a flying bomb in 1944. The plans for the scheme were prepared in the company's architectural section. The general contractors were Sir Robert McAlpine and Sons, Ltd.

ARCHITECT MAYOR

AT THE annual meeting of Harrow BC on May 27, Alderman S. R. Miller, FRIBA, was elected Mayor of Harrow. Two other architects also serve on the Harrow Council: they are Mr. E. S. W. Atherton, FRIBA, and Mr. F. Adkins, ARIBA.

SURVEYORS' NEW PRESIDENT

MR. WILLIAM ROBINSON BRACKETT, OBE, TD, BSc, who was elected president of the Royal Institution of Chartered Surveyors on June 6, is senior partner in the firm of Messrs. Henry Hallam and Son, of Nottingham. He was born in 1904 and was educated at Retford and Bishop's Stortford College. In 1922, he was awarded a scholarship by the RICS, and spent three years at Reading University where he studied agriculture. He was a prominent member of the Junior Organisation when it was growing fast during the inter-war years, and he played an important part in founding a junior branch in Notts., Lincs. and Derbys. He also represented the Junior Organisation on the Council from 1935 to 1937.

PROFESSIONAL ANNOUNCEMENTS

MR. CECIL C. HANDISYDE announces that he has taken into partnership MR. BRIAN TAYLOR. The practice will be continued from 68, Great Russell-street, WC1, under the title of MESSRS. HANDISYDE AND TAYLOR, AARIBA.

MESSRS. PETER DUNHAM, WIDDUP & HARRISON, chartered architects, of 42-44, Hastings-street, Luton, have opened a London office at 29, Bedford-square, WC1. (Tel.: Museum 6575.)

The address of the Bristol office of MESSRS. CYRIL SWEETT & PARTNERS has been changed from 10, Orchard-street, Bristol, to 59, Queen-square, Bristol.

MESSRS. J. J. STEVENS & SON, chartered quantity surveyors, of 52, Ebury-street, Westminster, SW1, have taken into partnership their head assistant, MR. A. H. D. YOUNG, ARICS, who has been with the firm for some years. The style of the firm will remain unchanged.

MR. OWEN E. PRIOR, ARICS, was joined in partnership on June 1 by MR. BRIAN HILLIARD, ARICS. The firm will continue to practise at 24, Buckingham-street under the title of Prior & Hilliard, chartered quantity surveyors (Tel. No.: Trafalgar 5215-7331).

MR. MATTHEW H. KILPATRICK, AMIMun.E., AMTPI, has commenced private practice as a consulting engineer at 3, Queen-street, Buckie, Banffshire, where he will be pleased to receive trade literature.

FROM "THE BUILDER" OF 1855

Saturday, June 9, 1855

ILLUMINATING GAS FROM PEAT. — Messrs. Campbell, of Mary-street, Dublin, have been for some time past engaged in solving a very important problem as regards this country—the production of illuminating gas from peat: the difficulties are at length surmounted, and a quality of gas can be produced which will burn with sufficient brilliancy for all usual purposes . . .

NEW LONDON AIRWAYS TERMINAL

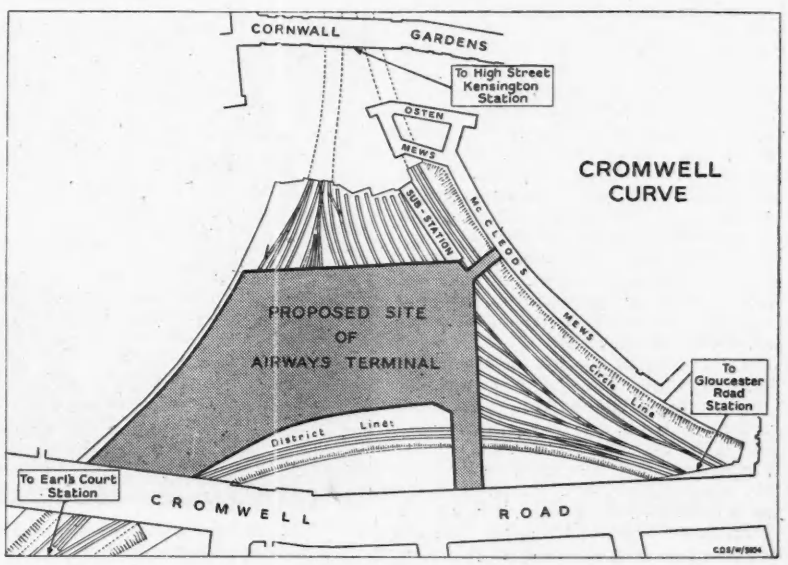
Decking Over the "Cromwell Curve"

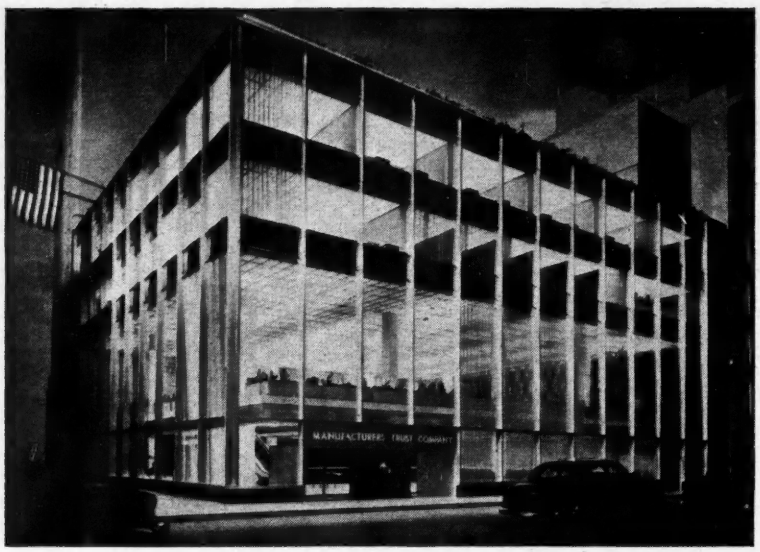
IN a recent Parliamentary reply the Minister of Transport and Civil Aviation referred to the proposal for an airways terminal to be constructed over the so-called Cromwell Curve in Kensington. As the accompanying sketch-plan shows, the site is in the triangle formed by the convergence of the District and Circle Lines between Gloucester-road, Earls Court and High-street Kensington stations.

London Transport is acting as agent for British European Airways in this project; its part is limited to the design and installation of decking over the site at street level to carry the necessary terminal and ancillary buildings. It will be seen from the plan that this deck, which will be of reinforced concrete construction, carried on steel framing and columns, will cover a little more than half the area of the triangle; it will, in fact, have an area of 140,000 sq. ft. The deck will be at a height of approximately 21 ft. above rail level and will have a roadway connection, at the south-west corner, to Cromwell-road and footway connections at roughly the south-east and north-east corners.

London Transport announces that the work of constructing the deck, which will be carried out without interference to normal railway traffic, is scheduled to start at the beginning of next year and will be in two stages. The first stage, which will cover the western half of the site, should be ready by the spring of 1957 and will permit erection of temporary buildings of a light nature so that this part of the site can be used by the airways authorities pending completion of the remainder of the decking.

It is expected that the final stage will be completed and handed over to the airways authorities by the middle of 1958 for the erection of their permanent buildings.





A new building for the Manufacturers Trust Co., New York City. Architects : Skidmore, Owings and Merrill.

NEW OFFICE BUILDINGS IN THE USA

[*From a New York Correspondent*]

THE first major building to be erected there for about 25 years is to be built in New York's Wall-street district. It will replace the 70-year-old New Produce Exchange Building which is to be demolished. The new building, an office block, will rise about 30-storeys and is estimated to cost 25 million dollars.

This is only one of many new office buildings to be erected in New York and other American cities during the coming year. One of the principal architectural firms engaged in preparing these schemes is that of Percy and Harold Uris. They have recently designed a large project to be carried out in Philadelphia which comprises two 20-storey buildings incorporating shops on the ground floor and underground. The firm has been responsibile for seven of the largest New York office buildings. Compared with the amount of work undertaken, the firm's staff is small, numbering some 30 employees.

Typical for their type of office buildings is the new 25-storey, 25-million dollar building which has been completed on the site of the old Ritz-Carlton Hotel which, of course, was outmoded long ago. Work during the construction proceeded in accordance with a strictly detailed schedule. Most of the materials were brought to the site only when needed. Construction workers' hours were staggered so that no time was wasted. Some of the operatives arrived at 7 a.m. to start mixing mortar for the bricklayers who came at 8 a.m.

In their designs for five of the largest office buildings in the last few years, the Uris brothers' policy has been to use every cubic foot of space that the zoning laws permit. They use graduated setbacks because it gives them more floor space per building.

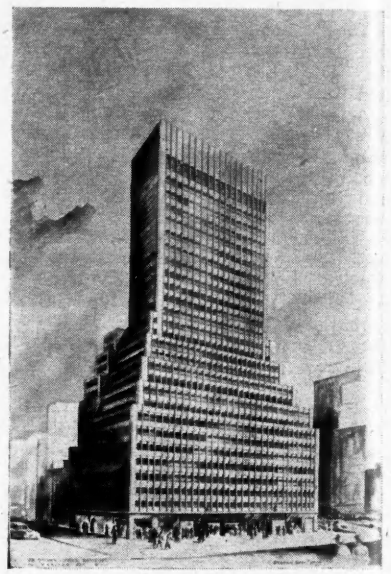
It is interesting to note that air-conditioning is considered to be essential in all new office buildings in the US. It is generally accepted that air-conditioning in summer is as necessary and as natural as heating in winter.

An original effect has been created in the exterior treatment of a new bank building in New York for the Manufacturers Trust Company (for which the architects were Skidmore, Owings and Merrill). Plate glass and polished aluminium are the principal materials used, and from the street a view is obtained of activity within the building. The main entrance is on 43rd-street and there is no doorway in the Fifth-avenue elevation. This unusual treatment affords an uninterrupted display window along the entire 100 ft. Fifth-avenue frontage.

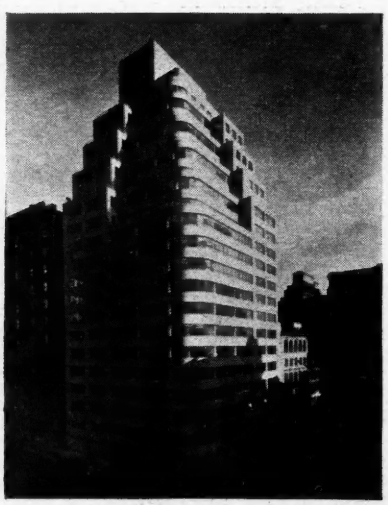
The safe deposit vault and the main banking hall are accommodated on the ground floor. A separate entrance is provided from 43rd-street which serves not only the lifts to the upper floors, but also provides direct access to the safety deposit vaults. This arrangement affords additional privacy for those using the vaults and also provides access to them after banking hours without the necessity of going through the bank.

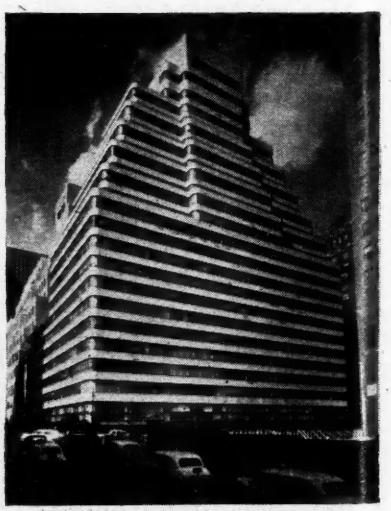
The main banking room for commercial accounts and senior officers is on the first floor, while the second floor accommodates clerical offices and the Personal Loan Department. The third floor provides room for expansion. A reception lounge, dining-room and kitchen is housed on the roof.

The design for the building has called for an arrangement whereby mechanical, electrical and acoustical facilities have been integrated into an artistic luminous ceiling. This over-all ceiling treatment conceals the sources of light and air-conditioning as well as acoustic materials.



A 28-storey building at Madison-avenue, New York City. Architect : Sylvan Bien.





A 22-storey building at Park-avenue (left) and a 25-storey building at Madison-avenue, New York City. Architects for both schemes : Percy and Harold Uris.

THE ARCHITECT AND INDUSTRY

A Talk to Gas Engineers

THE suggestion that because they both provided an economic service to the community, architects and engineers were approaching a closer relationship, was made by MR. E. D. JEFFERISS MATHEWS, OBE, FRIBA, ARICS, when he addressed the Institution of Gas Engineers at their recent annual general meeting. The title of his paper was "The Architect and Industry," and we give the following extracts from his remarks:

What is this new approach which the architect should have towards industry, and why should it result in things different from those we have known in the past—in general, in fact, accepted up to now? I base a great deal on this statement of fact: "Architecture is the only art that is wholly related to economics." A painter may create a masterpiece; in his lifetime or after, it may change hands at fabulous sums, but its pure economic value remains at the mere cost of a few square feet of canvas, wood frame and a little paint—the same in fact of any painting irrespective of the master, the same for an indifferent painter as for one of great skill.

It is the same in the art of music, the art of literature, of sculpture and of drama (although in this I accept that, when related to the commercial theatre, there is an indirect relationship to economics). The medium of expression has in itself no economic value. But in architecture this, obviously, is not so. Whether it be chickenhouse or cathedral, bungalow or mansion, a gas works gatehouse or the whole great building which may be necessary to enclose the production machinery of the plant, the cost of the buildings are directly related to the economy of the industry, in fact to the national economy, and it is the buildings no less than what they enclose, nor no less than their purpose, which are architecture.

I must here impose an aside in parenthesis because I have had to assume a point prematurely. Buildings, you may say, are just buildings; architecture is something else, the trimming we architects add. If you have said or thought this you could not have waved a more virulent red flag in front of a more ferocious bull! If you wait until the end of this paper, and then if it has achieved nothing more than to have exploded this wholly wrong conception of architecture, I shall be satisfied. For the moment may I, the outraged bull, be appeased for the time being, by asking that you will accept the point that the building, the purpose of the building, and the whole embodiment of an industrial plant, is "architecture"—entirely, completely, inseparably.

If, therefore, on the side of architecture that is an art, it is, by the nature of the medium used to express that art, directly related to cost, it thereby has at once the economic aspect to which I have referred. It will be easier, I think, to accept that the sides of architecture which are science and administration are equally wholly related to economics. "The art and science of architecture" has for long been the explanatory phrase. In the contemporary world it should, however, be taken a little beyond this. The practice of architecture to-day poses a trinity, inseparable and co-equal, at one and the same time; in all respects it is an art, a science and the function of administrative organisation: certainly a formidable combination of differing characteristics which imposes on us the challenge which most of us like to accept, and which is the zest, and quite honestly the fun, of our job.

So if we, as architects, see our work as an economic contribution to the nation, or, put in rather higher terms, if the achievement of architecture is dependent upon economic factors, are we not approaching the partnership with engineering which I have mentioned, since I am accepting, as I am sure you will agree, that there is no dispute that the creation and work of the engineer is by its obvious nature an economic service to the community.

Now down from the airiness of the abstract to the earthiness of the concrete. What do I really mean in plain words or example? Just this: my case fails hopelessly if by architecture is meant a mere applied adornment to an essential function, the omission or addition of which does not matter three ha'porth of sloe gin, because it would mean that the "adornment" is uneconomic, just something added which the directors think would be rather nice and be, perhaps, a sop to the long-haired gentlemen in the Town and Country Planning office, or to the directors' wives who hate "ugly gas works." "Anyhow," they say, "it will not cost much."

ESSENTIAL FUNCTIONS

But I have established my case if architecture means something which the architect can offer parallel and complementary with the engineer to improve the basic essential function; if, without one penny of additional cost, he can make a simple cover to a piece of plant the right proportions, the right colour and the right texture, or if his collaboration with the engineer enables the arrangements of buildings within a plant to be more convenient for the workers, or, again, if he is able to mould into a correct composition such often apparently incompatible things as a fuel elevator crossing a building at an odd angle with the form and shape of that building.

These are his functions. He must achieve them without additions to the economic cost; he must achieve them without any curtailment of the engineering efficiency. Such things are architecture. They are as much architecture as—what shall I give as the most surprising yet obvious example?—Salisbury Cathedral set upon its wonderful flat expanse of lawn? or the solid formal domesticity of Wren's Hampton Court?

Exaggeration, you may say. Not at all. These examples, as all examples of the great architecture of the past, were wholly economic. The principle of architecture has not changed. What has changed, and in this lies a fundamental of the case I am laying before you, is the nature of the national economy. It is the disregard of this change or, perhaps more often, the forgetfulness that architecture is so inseparably related to economics, that has led us all, architects included, too often to fail to see where our contribution lies in the contemporary economic circumstances.

SAXON CHURCHES NEAR HARROGATE AND YORK

IN the vicinity of Harrogate and of York are five churches, mostly small and generally of no great architectural interest, but with Saxon work ranging from possibly the ninth to the middle of the eleventh century; they should not be missed by the serious traveller.

Near Harrogate are Bardsey, and Collingham, in Wharfedale. Bardsey, the oldest of the five, retains its tower, with a porch beneath, and nave from the obscure middle Saxon period of the ninth century and adjacent times; the walls are unusually thin—about 2 ft.—and the tower seems to have been built over the porch. At Collingham, the second oldest, from the tenth century and adjacent half-centuries, only the south-west corner of the nave shows the antiquity originally of the whole nave.

The three churches in and near York are of the mid-eleventh-century time—later, but more interesting and certainly better known and represented outside the county. The best preserved is that at Kirk Hammerton, just off the main road several miles west of York: the original nave, western tower and chancel remain but have become subsidiary to a slightly larger nave and chancel to the north, as at Carshalton, Surrey. The newer work is of interest, as it was added about 1891 by Hodgson Fowler, the designer of the present central tower of Rochester Cathedral; it is quiet and in harmony with the old work, which it disturbs as little as possible. There is a curious "pre-Norman" capital to the west doorway. Skipwith, a few miles SSE of York, a little earlier than the other two, has only the tower and a little of the nave, but it has a strange shallow recess, flanked by shafts, high up inside the tower, the top of which (incidentally) is medieval. In York itself the church curiously named St. Mary Bishophill Junior (or, less accurately, St. Mary the Younger) has only the tower, very difficult to see owing to surrounding buildings and trees; there is a double opening with a "mid-wall shaft" of normal Saxon type, familiar to many from the sketch in Bond's *Gothic Architecture in England*, 1906 (p. 457, fig. 1).

The writer has happy memories of his visit to York and district. The pleasure derived from the study of these most ancient English Christian remains is not archæological, or even architectural, alone, but springs from a deep and awed sense of the multitude of human events that have taken place since their ancient stones were hewn and placed in the positions where they still, like sentinels of something holy and eternal, stand.

H. V. MOLESWORTH ROBERTS.

OBITUARY

J. H. Belfrage, ARIBA, FRICS

THE sudden death occurred at the Cottage Hospital, Kelso, Roxburghshire, on June 3, of Mr. James Herbert Belfrage, ARIBA, FRICS, of Linton Mill Cottage, Kelso. Mr. Belfrage was elected an associate RIBA in 1902.

PRESENTATION OF TPI GOLD MEDAL

Tributes to Sir Patrick Abercrombie

FOR outstanding achievement in the field of town and country planning, Professor Sir Patrick Abercrombie, FRIBA, was presented with the Town Planning Institute's Gold Medal at a ceremony at Caxton Hall, on May 26.

Although it was Election Day, a representative gathering of the Institute's Fellows and Members and a number of personal friends attended to pay tribute to Sir Patrick, whose outstanding professional work over the years has won the admiration of planning authorities not only in this country but in many parts of the world.

The Institute's President, Mr. Ernest H. Doubleday, presided, and tributes to Sir Patrick's achievements were paid by the two sponsors of presentation, Sir George Pepler and Sir Howard Roberts.

SIR GEORGE PEPLER, CB, who is the only other holder of a similar medal, said that the outstanding contribution made by Sir Patrick to the profession and practice of town planning might be classified under five main headings: (1) teacher; (2) writer; (3) pioneer in practical civic survey and regional planning; (4) planner of bombed cities; and (5) a missionary.

Referring to Sir Patrick's pioneer work in civic survey, Sir George said that because survey was not specifically required as a preliminary to statutory planning, until the passing of the Town and Country Planning Act, 1947, many forgot that it was a voluntary practice long before then. Although Patrick Geddes was the first to expound the theory, it was Abercrombie who was the pioneer in the practical application of the principle in the preparation of plans for local authorities, and his book *Town and Country Planning*, published by the Home University Library in 1933, just after the passing of the Town and Country Planning Act, 1932, contained a comprehensive list of headings for regional and civic surveys.

Sir George also spoke of Sir Patrick's regional plans, which he prepared during the inter-war years, but none of these, he said, was carried out partly because those who might have done so lacked the breadth of vision of the authors, and partly because some were still nostalgic for the clanging of the parish pump. But they blazed the trail and developed a technique which came to full flower in Abercrombie's Greater London Plan of 1944.

WORK AT LIVERPOOL

SIR HOWARD ROBERTS expressed the view that no other man had done so much towards promoting the cause of planning as Sir Patrick when he was Professor at Liverpool University. His work there conferred a great blessing on the country as a whole.

Other tributes were paid by Mr. J. H. Forshaw, who collaborated with Sir Patrick in the preparation of the Greater London Plan, and Dr. Thomas Sharp, P-PTPI.

DR. SHARP described Sir Patrick as almost a landscape in himself, so wide were his fields of activity. But there was a field in which he had not worked, and that was that stale, flat and unprofitable piece of bogland which was occupied by the Law. "And," added Dr. Sharp, "I am sure that if Sir Patrick had had time to do that among all the other things he has done, there would be something less tangled and prickly than the crop of thistles that now grow there."

Acknowledging the honour conferred on him, SIR PATRICK said his career had been a long and varied voyage, concerned as it was with planning schemes for Dublin, Doncaster, London, Plymouth, Hull, Bath, Palestine, Ceylon, Edinburgh, the Clyde, the West Midlands, a brief encounter at Hong Kong and Cyprus, and now Indonesia and Addis Ababa—always in collaboration.

And to what after that long voyage, did he look forward? Not, he confessed, to a flat in Pimlico with its "Front audacieux" and Tower of Glass, but to "Mon Petit Village" between the Berkshire Downs and the Thames and the "Garden Plot of My poor House"—"Qui m'est une Province et beaucoup d'avantage." He thanked them for all they had said; it was far too much for the work he had done.

BUILDING AS A CAREER

Firm's Management Training Scheme

[*By Our Own Representative*]

IT has recently been announced (*The Builder*, May 27) that the Institute of Builders, supported by the National Federation, propose to set up a Board of Building Education which will include amongst its aims the encouragement of young men of good education to make their careers in building. In addition, the London Master Builders' Association has also just approved the broad principles of organisation of a pupilship scheme designed to lead to executive, administrative and managerial positions in the industry.

Many large firms have, of course, gained experience of running schemes of this kind over a considerable number of years and the administrative pupil scheme of Higgs and Hill, Ltd., which is understood to be one of the first to have been instituted and to be operating successfully for some eight years, provides a good example of a privately organised management training scheme.

Higgs and Hill, Ltd., recruit two administrative pupils, normally aged between 17 and 18 years, annually from the public and grammar schools. They are indentured to the company for a period of four years and during this time are based at the London office but may be required to reside temporarily wherever building work is undertaken.

Concurrently with their practical training, the pupils are required to attend an approved course at an evening school offering instruction to students working (i) for the Ordinary National Certificate in Building and (ii) working concurrently for the intermediate examination of the Institute of Quantity Surveyors.

Training during the first three and a half years is given in seven departments, each occupying six months, as follows: Wages and Timekeeping; Costing; Storekeeping; Site Engineering; Buying; Bonus Surveying; Surveying. (The order of the programmes is varied in order to avoid both pupils being in the same department together but surveying occupies the seventh six-month period for each pupil.)

FINAL SIX MONTHS

The final six months are normally devoted to a further period in the surveying department but should a pupil wish to specialise elsewhere, or if he is considered more suitable for specialising elsewhere, the final period may be spent in some other department.

Every effort is made to keep the pupils in close contact with actual building operations. This is particularly the case in the periods spent on timekeeping and site engineering. Similarly, where twelve months are spent in the surveyors' branch a part of this time is, where possible, actually spent on jobs.

Higgs and Hill, Ltd. pay their indentured administrative pupils during the first year £4 per week; during the second year £4 10s. per week; during the third year £5 per week; and during the fourth year £6 per week. If the pupil is required to reside away from London, subsistence allowance is also paid. Indentured pupils are also eligible for the various prizes offered by the company to those of its employees who pass certain technical examinations.

By the end of his indenture the pupil should have gained the Ordinary National Certificate and have passed the intermediate examination of the Institute of Quantity Surveyors, and he will then normally have to undergo his period of National service. At the conclusion of his National service he should be eligible for employment in the building industry either as an assistant surveyor or in a minor administrative post, and he will be ready to resume his studies to complete his qualification with both the Institute of Quantity Surveyors and the Institute of Builders.

No guarantee can be given as to subsequent employment. However, Higgs and Hill, Ltd., when filling vacancies in their own organisation, give preferential consideration to applicants who have been trained by them, and they believe that the building trade generally will recognise the value of the certificates and the quality of indentured training gained through their scheme.

BOOKS RECEIVED

BLUEPRINT READING FOR HOME BUILDERS. By J. Ralph Dalzell. (London: McGraw-Hill Book Co. Inc.) Price 41s. 6d.

FOUR-CUTTER PRACTICE. By A. H. Haycock. (London: The Technical Press, Ltd.) Price 16s.

A HISTORY OF FORTIFICATION. By Sidney Toy. (London: William Heinemann.) Price 30s.

THE CARE OF WOODWORK IN THE HOME. By Edward H. Pinto and Eva R. Pinto, BSc., ARIC. (London: Ernest Benn, Ltd.). Price 5s.

ALUMINIUM IN BUILDING

South Bank Centenary Exhibition

From Our Own Representative

THIS year marks the centenary of the production of aluminium in Great Britain, and to show the wide variety of possible uses in the application of this relatively new medium, the Aluminium Development Association have celebrated the event by staging an Aluminium Centenary Exhibition at the Royal Festival Hall, London. This exhibition holds an interest to the general public, and has been honoured by a visit on June 3 by the Duke of Edinburgh, who was afterwards guest of honour at a luncheon given by the Council of the Association, under the chairmanship of the president, Dr. Horace W. Clarke, FInstM, on board HQS "Wellington," moored on the opposite bank.

RAPID DEVELOPMENT

The rapidity in development of this versatile material is not always realised at first. Exactly 100 years ago, the first particles of aluminium were made in Great Britain, by a rather expensive chemical process. Later, the more efficient electrolytic reduction process was evolved, from which current methods have been developed. The discovery in 1907 that aluminium alloys as strong as mild steel could be produced opened up new possibilities for the development of the metal, and by 1913 world production had increased to 70,000 tons. Since then, the output of aluminium has more than doubled itself each successive decade, and it is likely that this rate will be maintained in the future.

World production of the metal now approaches 3,000,000 tons a year. British industry contributes 30,000 tons to this total of virgin aluminium, and is responsible for the fabrication of nearly 300,000 tons into semi-finished products. Many of the production techniques which have made the present level of world output possible were originally evolved in Great Britain.

Some of the earliest applications of aluminium to be carried out came within the sphere of building. In 1897, when the Klondyke, in America, was attracting gold diggers of all types, a prefabricated aluminium house was invented by a Mr. Arthur F. Howes, of Seattle, who claimed that it could be readily carried, as it weighed a mere 150 lb. complete with bed, stove and cooking utensils. In the same year, the cupola of the Church of San Gioacchino was covered with aluminium sheet—its first use as a fully-supported roof sheeting. Since then, resistance to corrosion has led to the wide use of aluminium as roof sheeting, as well as many applications as both a cast or wrought material. The post-war aluminium prefabricated house demonstrates the general acceptance of this metal as an economic building material. Indeed, 7 per cent. of the home consumption of aluminium in 1954 was accounted for by the building industry.

The 1955 Centenary Exhibition forms both an historical account and a current survey, and shows the overall pattern of technical development. It has been divided into 12 specific fields, including building, structural and general engineering, and other sections portray the history of the industry and its products, the scope of its research activities and its future prospects. Designed by Mr. Ronald Dickens, MBE, FSIA, the Exhibition is mainly contained inside the Festival Hall Building, but the larger structures, boats and vehicles are outside. As an indication of the interest the exhibits may have to members of the building and architectural fields of activity, a review follows of some of the items on display.

HISTORICAL SECTION

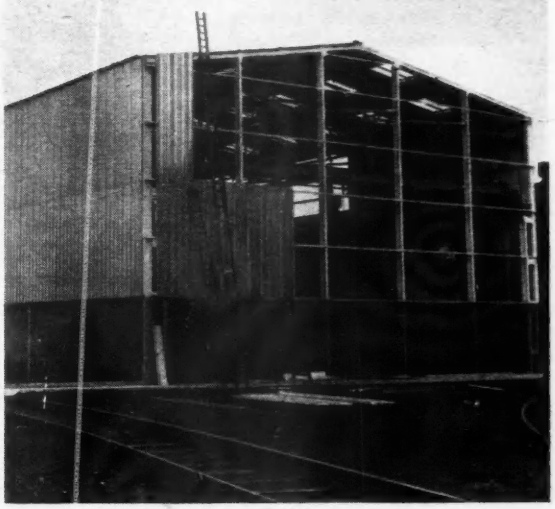
The historical section of the Exhibition presents a chronological display marking the principal stages in the development of the aluminium industry and its products from 1855 to the present time. Those who contributed to its earlier progress are represented in a picture gallery, and associated with these portraits are data relating aluminium to other common metals in the earth's crust, with several groups of historical exhibits. These include a reproduction of the famous statue of Diane de Gabies now in the Louvre, cast about 1860 in Paris by Paul Morin et Cie.

Also on view is one of the 217 cast aluminium eagles, gilded and chased, ordered by Napoleon III in 1861 to replace the bronze eagles which surmounted the standards of the French army of that time (loaned by the Directors of the Musée de l'Armée, Paris). Medallions, cooking vessels, and specimens of early aluminium can also be seen in this section.

SOME CURRENT USES

The larger exhibits in the building section include models of prefabricated buildings, such as those marketed by BOOTH AND CO. (ENGLAND) LTD. These include a patent adaptable building, about 14 ft. in diameter, which has been

This aluminium hangar door-leaf, 50 ft. high by 25 ft. wide, is one of 16 closing the end of a 200-ft. span hangar in Bedfordshire.



A store building incorporating the "Kynalok" secret-fix cladding system on both roof and walls.

pressed from aluminium sheet. The assembly of its panels on site is carried out by a system of lap jointing and bolting. A model is exhibited of a multi-storey school building marketed by the BRISTOL AEROPLANE CO., LTD., the planning module of the actual building being based on a 4 ft. module, with the structures, stanchions and beams spaced at 8 ft.

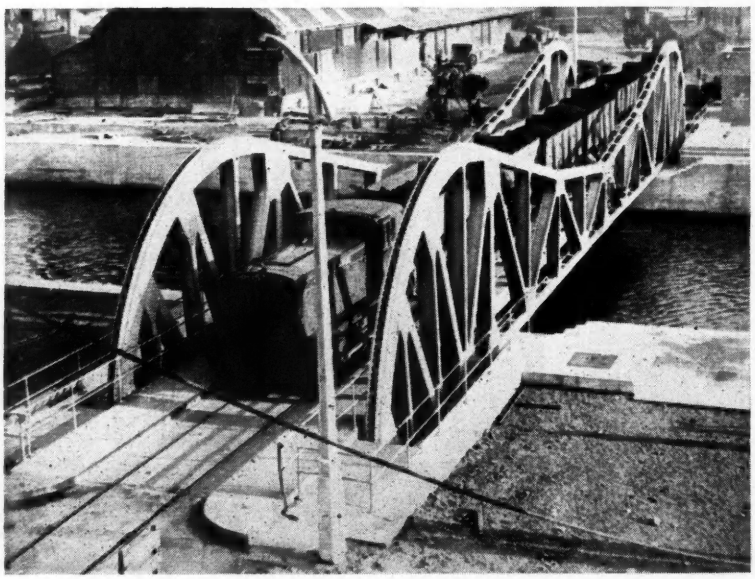
Some of the more important building applications of aluminium are shown, such as roofing, wall cladding, window frames, insulation, handrailing, balustrading and ornamental work. Most of these items are incorporated in various systems, such as dwelling-houses, schools, garages and greenhouses. The promising export market for British aluminium prefabricated buildings has been largely due to the light weight and versatility of the metal.

A development considered in this country ten years ago and recently brought to fruition in the United States is the use of aluminium for prefabricated wall panels, providing the advantage of factory production, reduced space, light weight and consequent fast erection. The panel of curtain walling manufactured by WILLIAMS AND WILLIAMS, LTD., has its bottom section pressed from sheet with insulation infilling, and its top portion fitted with two side-hung and one top-hung windows. A glazed partition incorporating an aluminium door, made by FREDERICK BRABY AND CO., LTD., is also on display, together with an aluminium-faced plywood panel made by VENESTA, LTD., suitable for wall partitions, with examples of edge finishing. The aluminium glass curtain walling produced by HILLS (WEST BROMWICH), LTD., is on display, as well as the curtain walling of AYGEE, LTD.

The softness of pure aluminium for roof sheeting and flashings is an advantage in forming, and its high corrosion resistance is another. Corrugated and troughed roof sheets in non-heat treated alloy are invariably used for industrial and other roofing, since it has sufficient strength for the pre-formed sheet to span between purlins. A British Standard is in course of preparation for this material, and the Exhibition displays examples of industrial-type sheeting, including an embossed aluminium roof decking made by the RUBEROID CO., LTD., and a fully supported roof covering. The roofing tiles recently introduced to the British market by PREFATILE (GB), LTD., which are of sheet metal aluminium pressings, can also be seen together with a patent roofing sheet produced by S. W. RONALD AND CO. (LONDON), LTD. Full-sized examples of metal roofing work are on display, among them a back gutter of 20 s.w.g. aluminium and a variety of rolls, welts and standing seams.

For window frames and other semi-structural components, extrusions in the heat-treated aluminium-magnesium-silicon alloys are used, assembly being mechanical or by flash butt welding. The variety of window frames exhibited, with WILLIAMS AND WILLIAMS, LTD., JAMES GIBBONS, LTD., and the CRITTALL MANUFACTURING CO., among the makers, demonstrates the increasing use of the aluminium for this purpose.

The other products displayed include the "Kynalok" secret-fix cladding marketed by the ARCON GROUP OF COMPANIES, which incorporates extruded sections and sheet to span 7 ft. 6 in. on roofs, 10 in. on walls. A patent suspended metal ceiling incorporating radiant panel heating and acoustic treatment, produced by FRENGER CEILINGS, LTD., is displayed, together with special lighting fittings adapted to suit. Other building items are on view, such as a selection of ventilators and extractors, including the domestic "Two-Way" electric fan recently introduced to the industry by COLT VENTILATION CO., LTD., and a number of street lighting standards, insulating foil and tube scaffolding.



The double-leaf bascule bridge at Aberdeen undergoing trials. This bridge has a clear span of 100 ft. between trunnions, and carries a 22-ft. roadway.

One of the 217 cast aluminium eagles, gilded and chased, ordered by Napoleon III in 1861 to replace the bronze eagles surmounting the French army's standards.

The contractor's equipment on view includes examples of aluminium moulds, scaffolding and alloy couplers. Aluminium-based materials are economically suitable for scaffolding, moulds and form work for the casting of concrete, cranes' jibs and staging, because of the wide variety of alloys available and the facility with which they may be worked. Among the exhibits is a pre-cast concrete beam mould, marketed by BEAM STRUCTURES (BRITAIN), LTD., complete with base rail and stop ends.

STRUCTURAL ENGINEERING

The chief advantage of aluminium for the structural engineer is its combination of lightness with strength. Even when an aluminium section is increased to allow for the greater deflection of aluminium under load, it will still be only half the weight of an equivalent steel beam. Structural aluminium can be worked with ordinary engineering tools and equipment, is readily transported and erected, and is available in a wide variety of shapes and sizes. However, full advantage is gained only when the designer deliberately designs for aluminium.

The exhibits in the structural engineering section emphasise the plasticity in form of aluminium, and show its various advantages. They include a 170 ft. jib for a walking dragline machine, constructed by HEAD WRIGHTSON ALUMINIUM, LTD. It weighs about 11 tons and is designed for a minimum working angle of 25 degrees with a bucket capacity of 5 cu. yds. The use of aluminium has enabled a longer jib length to be achieved than otherwise usual.

A leaf of a large hangar door is displayed outside the Festival Hall. This door leaf, 50 ft. high by 25 ft. wide, is one of 16 closing the end of a 200-ft. span

hangar in Bedfordshire, and was built by SMD ENGINEERS, LTD. Aluminium extrusions and plate are used for the framing, and its cladding comprises symmetrical trapezoidal trough profile sheeting. The doors are lined with ¼ in. "Asbestolux."

Also on view is a prefabricated stressed skin roof capable of covering spans of up to 50 ft. The main materials are aluminium sheet and extrusions, the joints to the extrusions being resistance welded. The load applied is 20 lbs. per sq. ft. and the roof weight is about 1.8 lbs./sq. ft. Thermal insulators to the shear members are laminated fibre glass. This panel, made by ALUMINIUM CONSTRUCTION CO., LTD., may be fabricated to give the required camber, and appropriate interior and exterior finishes may be applied.

A model is displayed of the double-leaf bascule bridge at Aberdeen, which has a clear span of 100 ft. between trunnions and carries a 22 ft. wide roadway. Mr. John Anderson, MIStructE, Harbour Engineer, was responsible for the construction of this bridge, which was fabricated by HEAD WRIGHTSON ALUMINIUM, LTD. The patented method of balancing by means of counter weights applied *via* ropes to the large cams eliminates tail ends to each opening portion, and the large pits into which they would have to sink when the leaves were open.

Another interesting model is that of the Comet hangar at Hatfield aerodrome. This hangar has a 200 ft. clear span, a length of 330 ft., and a clear height of 45 ft. Its main structure comprises 12 portal frames of 217 ft. span, between pinned bases with a 55 ft. overall height. The roof is of aluminium alloy decking covered with bitumen felt and glazing with aluminium alloy bars; and the side cladding is of corrugated sheeting lined with insulated board, backed with aluminium foil. Both ends are fitted with folding doors of aluminium alloy to give a clear opening of 200 ft. by 45 ft. A model of a transportable hangar, made by SMD ENGINEERS, LTD., is also shown and is designed for easy dismantling, transportation and re-erection without prepared foundations. It is clad with corrugated aluminium sheets and each half rib is composed of four standard units hinged at the apex to facilitate dismantling.

Other exhibits in the structural section include aluminium cross-girders and decking for military bridges, an auto dumper bucket, provided by HEAD WRIGHTSON ALUMINIUM, LTD., and a 30-ft. high all-purpose servicing tower with a transverse cantilever platform giving a variety of tower and staging structures (AERO CONTROLS, LTD.). Various types of rivets are shown, as well as a quadrant for a slot aerial used for the new VHF broadcasting stations, made by SMD ENGINEERS, LTD. This item has a curved surface of aluminium alloy sheet slotted in the middle, the slot being filled with Perspex. The side members are special extrusions with lips to provide good electrical contact and a recess for filling with mastic to ensure that the joints are watertight.

The general engineering section also includes some items of interest to the building industry, such as a compressed-air-driven 16-in. portable ventilating fan consisting of aluminium castings for lightness and durability. A metal-sprayed steel joist is a reminder of the wide use of aluminium coatings applied by metal-spraying techniques for the protection of structural steelwork and the mechanical handling equipment displayed includes an aluminium alloy sack truck able to carry loads up to 2 cwt. Another item is the "Minilift" hoist, made by DIDSBURY ENGINEERING CO., LTD., which has a 15 cwt. capacity. Such exhibits as a brick pallet produced by CPC (SOUTHAMPTON) LTD., are shown, with a range of electric hammers, woodworking lathes, cross-cutting and trenching machines, and a chain-beam tenoning machine.

The Aluminium Centenary Exhibition is due to close to-day (Friday, June 10).

TECHNICAL EDUCATION

Address by ATTI President

THE presidential address to the Association of Teachers in Technical Institutions was delivered on May 29, at the Association's 46th annual conference, by Mr. S. Rubinstein, BCom, BSc(Econ), of Derby Technical College. The following are extracts from Mr. Rubinstein's address:

The 1953-4 programme of school buildings showed a three-fold jump in the number of school places planned in secondary technical schools in that building year. This is to be greatly welcomed, but the number of schools and places is still small compared with needs. In January, 1949, the number of secondary technical pupils was given in the Ministry's report as 72,282; in January, 1953, the figure is 79,214. This is hardly a striking rate of progress for an atom age. Year after year attention is drawn to the necessity for an intake at 11+, for a physical existence apart from a technical college, and to the necessity of retaining suitable pupils after the statutory school-leaving age, implying suitable maintenance grants.

The Minister has now stated that the pioneer stage in technical education is over, and proceeded from that to draw the conclusion that technical courses ought to be distributed over as many schools as possible. Does the statement mean that the modern-technical type of school is to be the favoured child of the Ministry? If so, what is the future of the secondary technical school as such? The Minister's statement is not reassuring.

The range of 15-25 per cent. of grammar school and technical school places, as envisaged by the Minister, will meet with opposition, and not from teachers alone. In effect it means a grave limitation of opportunity for children, denying them the fullest chance of developing.

This year sees the first examination of the Associated Examining Board, and the measure of support given them, and the results, will be looked at by all with the interest of further education at heart with care and interest. These examinations offer to the technical schools one way to the goal of the General Certificate of Education.

In the House of Lords, in December, was debated the topic of higher technological education, and there was shown, regrettably, a lack of appreciation of the rôle of the technical college. There was outlined in the debate a programme for expansion of such education in universities, and especially at the Imperial College in London, but no similar programme for expansion in technical colleges generally. We believe this policy not to be in the best interests of the country, and hope that further counsel will be taken. The contribution we are already making can and must be enlarged if we are to maintain our position in world industry and trade. At the moment the situation is not too promising. The 1953 Ministry report showed a decline of about 3 per cent. in Ordinary National Certificates gained, and this will affect future Higher National Certificate figures. There was a decline similarly for the National Diplomas.

The need is for more full-time students. In the debate in the House of Lords insistence was laid on part-time courses for technical colleges and an ending to what was called "cut-throat competition" between the Universities and a new type of technical college. There is no need for competition, cut-throat or otherwise. The country needs all the trained scientists and technologists it can produce from all the available sources.

BALLAST AND SAND INDUSTRY

New Wages Award

BY agreement of the National Joint Council for the Ballast and Sand Industry on May 31, the wages agreement was amended as follows:—

(1) The basic rates of wages for labourers shall, from the beginning of the first full pay period following June 11, be as follows:—

Class 1, 3s. 2½d. per hour.
Class 2, 3s. 1½d. per hour.

(2) The rate of payment to watchmen shall, from the beginning of the first full pay period following June 11, be as follows:—

Class 1, 20s. 3d. per shift.
Class 2, 19s. 3d. per shift.

The NJC states that employers already operating a higher basic wage in accordance with Clause 7 (7) of the wages agreement may be exempted from such portion of the present increase as is already in operation.

The rates of wages for "C" class licence drivers are to be considered at a meeting of the appropriate NJC Committee in the immediate future.

The employers' section of the NJC have recently agreed, by correspondence, to an application from the Employers' section that in the schedule of differentials (Clause 7 (4)) mechanical shovel drivers should be linked with dumper drivers at a differential of 2d. per hour.

The entry in the schedule of differentials should therefore be amended to read: Dumper and mechanical shovel driver—plus 2d. per hour.

Further details from the Employers' Secretary, National Joint Council for the Ballast and Sand Industry, 48, Park-street, London, W1 (tel.: Grosvenor 8967).

BUILDING COSTS

National Federation's Four-point Reduction Plan

SPEAKING at the half-yearly general meeting of the National Federation of Building Trades Employers, held at Clacton-on-Sea on June 7, the President, MR. HARVEY G. FROST, OBE, said that builders had been saying for many years that consumer resistance would come. "It has, and we must intensify our efforts to reduce costs," said Mr. Frost, who added: "The cost of materials and the wages bill together account for some 90 per cent. of the total cost of building work. Both of these items are outside the control of builders. Materials prices are fairly steady at the moment, but there is no sign of a decrease; in fact, all the indications seem to point to a possible increase. Building wages have to take into account national wage trends, and the increases given earlier this year — totalling some £25m. in a full year—did no more than keep our operatives' wage packets in line with those of workers in other industries.

"The building employer is thus left with a very narrow field in which he can directly influence the general level of building costs and so ease the burden on his client and ensure continued employment for his men. But within this narrow field the National Federation, with the full support of its ten Regional Federations, has a four-point plan on which it is asking member firms to concentrate. The four points are:—

1. *Mechanisation and Research.* — Mechanical methods must be used on all sites where they can be profitably employed. Member firms are already collaborating with the Building Research Station in a series of trials aimed at overcoming building problems; meantime the Federation is disseminating the results of research throughout the industry.

2. *Organisation of Work on the Sites.*— The Federation has set up a Building Industry Advisory Service which will soon be ready to operate. The Service will advise firms on such matters as work study, site organisation, planning and progressing of labour and materials, personnel administration and supervision.

3. *Education and Training.* — The industry must have competent personnel in all grades. Our National Apprenticeship Scheme and the methods adopted to train our general foremen are among the most progressive in the world. The recent setting up of a Board of Building Education, on which NFBTE representatives will sit with their colleagues of the Institute of Builders, will now be responsible for the important job of advising on the training of personnel for the supervisory and managerial grades.

4. *Co-operation.*—In all these matters we must have the full support of the architects, surveyors and operatives. Our consultations with the representatives of these groups are constantly aimed at working as a team and so improving the efficiency and increasing the productivity of our industry.

"These are the main directions in which the National Federation is determined to give a lead, otherwise the scale of the programme which contractors are called upon to carry out—whether it be houses, factories, schools, offices or maintenance and repair work — is bound to diminish and widespread redundancy and unemployment will be the result," said Mr. Frost.

SOCIETIES

LIVERPOOL ARCHITECTURAL SOCIETY

Talk by Dr. Ronald Bradbury

DR. RONALD BRADBURY, FRIBA, Liverpool City Architect and Housing Director, told the Liverpool Architectural Society recently that in the course of his previous job at Glasgow and during his six years in Liverpool he had been responsible for about one per cent. of the national housing output since the war.

In Liverpool alone one new dwelling was being completed every 40 working minutes, and at Kirkby alone the city had spent £11m. The capital expenditure of his department was about £6m. a year.

Dr. Bradbury told the members that when Sir Lancelot Keay, his predecessor in Liverpool, handed over the department to him he said he would find it a satisfying job.

"He was right," said Dr. Bradbury, and he added that he had found there was "fun and fascination" in creation—particularly when done on a big scale—and there was interest and excitement in administration. There were two dangers, however, and those were saturation and the problem of relaxation.

Sometimes, he said, there was bitterness and frustration for one could not view the great housing needs with equanimity and could not be satisfied while realising the squalor in which some citizens had to live.

At the annual meeting of the Society, Mr. W. Glen Dobie, FRIBA, was re-elected president, the vice-presidents being Mr. F. J. M. Ormrod, FRIBA, and Mr. H. A. Dod, FRIBA.

INSTITUTION OF STRUCTURAL ENGINEERS

Election of Officers

AT THE annual general meeting of the Institution of Structural Engineers, which was held on May 25, the following honorary officers and members of the council were elected for the session 1955-1956:

President: Stanley Vaughan. *Vice-presidents*: J. Guthrie Brown, A. G. Pugsley, G. S. McDonald, L. E. Kent, W. H. Woodcock and A. J. Ockleston. *Honorary treasurer*: E. N. Underwood. *Honorary secretary*: F. R. Bullen. *Honorary editor*: G. W. Kirkland. *Honorary curator*: R. Summers. *Honorary librarian*: H. C. Husband. *Members of Council*: Sir Donald Bailey, T. F. Burns, F. M. Bowen, R. W. Schofield. *Associate-members of Council*: R. C. Buxton and A. S. Sinclair.

The new council takes office in October.

PEABODY FUND IMPROVEMENTS

It is stated in the recently issued annual report of the Peabody Donation Fund that, since 1949, £283,357 has been spent on improvements which include the installation of electricity, the replacement of kitcheners by modern open fires and the provision of 209 self-contained flats involving some amalgamation of old associated flats.

HOUSE BUILDING COSTS AND SELLING PRICES

Recent Trends Examined

AN investigation by the Co-operative Permanent Building Society shows that the prices at which existing houses have been sold during the last two years have been relatively stable, while house building costs have been rising. The results of the inquiry, which are examined in the Society's "Occasional Bulletin," also indicate that during the first quarter of this year prices generally were a little above the levels ruling at the same time last year.

The following table depicts the trends of the prices of second-hand houses, new houses and house building costs in Great Britain (quarter ended December 31, 1952 = 100):—

Quarter ended	House Prices				House bldg. costs
	Re-Sales			New houses	
	Up to £1,500	£1,501-£2,500	Over £2,500		
31.12.46	70	71	74	—	—
31.12.47	85	86	94	—	74
31.12.48	85	84	90	—	79
31.12.49	92	95	95	—	80
31.12.50	94	97	99	—	83
31.12.51	102	105	108	—	98
31.12.52	**100**	**100**	**100**	**100**	**100**
31.12.53	99	98	99	100	102
31. 3.54	99	98	94	101	103
30. 6.54	99	98	98	102	104
30. 9.54	100	97	95	100	104
31.12.54	98	97	96	101	106
31. 3.55	101	98	98	102	107

The bulletin states that the house building costs index has been adjusted according to variations in the prices of materials used in house building and changes in the wages of building operatives. It is not possible to take into consideration changes of productivity because data on this factor, which can be reduced to figures, is not available. From the end of the war until about 1953 the productivity factor in compiling the index had not assumed a real degree of importance, and the indices up to that time were very useful in indicating the trend of house building costs.

HIGHER PRODUCTIVITY

However, the bulletin says, during 1953, it was generally accepted that productivity in the industry was at a higher level than in previous years—there were fewer stoppages due to shortage of building materials, and the economies of larger scale production were possible because licences could be obtained to build up to 12 houses at a time. In January, 1954, licences could be obtained to build up to 50 houses at a time, and since then restrictions on building have been almost completely removed.

In these circumstances, the house building costs index probably shows a steeper rise than has actually occurred and it is for this reason that the index showing the average prices at which new houses have been sold is included in the table.

According to the indices, the prices at which existing houses have been sold during the last two years have been relatively stable, whilst house building costs have been rising. During the first quarter of 1955 there appeared to be an upward movement in house prices.

A New Town—Its Task and Its Problems

TALK ON DEVELOPMENT AT BASILDON

AN account of the progress made by the Development Corporation at Basildon New Town was given by SIR HUMFREY GALE, chairman of the Corporation, when he addressed members of the Publicity Club of London recently. We take the following extracts from Sir Humfrey's remarks:—

The disorderly expansion of great cities into the countryside was a process which had gone too far before the war, and it has been the object of various planning authorities to prevent this bulging out on the verges of already overcrowded communities and to provide some kind of green belts around them. Hence the various negative controlling actions which have been taken by the public authorities concerned with planning, including the Ministry of Housing and Local Government. Since the population of overcrowded towns and cities must be given accommodation somewhere, it has now become plain that negative control is not enough and that some positive action must be taken.

There are two main methods by which such a solution could be sought. They are the expansion of existing towns, and the creation of new towns.

The creation of new towns is dealt with under the New Towns Act, 1946, and the expansion of existing towns under the Town Development Act, 1952.

CREATION OF NEW TOWNS

Under the New Towns Act, 14 new towns have been created, seven of these for London; the first in 1947 and the last of them in 1949.

Many people had misgivings about the wisdom of launching the policy of new towns without some pioneering experiments. There were bound to be mistakes and misfits, but due to the energy and enthusiasm displayed by the Development Corporations, it is already possible to see that the new towns are proving a success—and possibly a spectacular success—and there is no doubt that they should make a substantial contribution towards the decentralisation of population and industry from Greater London.

Basildon is the sixth of the London new towns in order of creation, the Designation Order for it having been made on January 4, 1949. The area designated comprises 7,834 acres and is by far the largest of all the new towns and, due to its unusual history, is certainly the most difficult to build.

THE OLD BASILDON

Until towards the end of the nineteenth century, Basildon formed part of a large agricultural area bordering the Thames on the north side, and then two factors contributed to effect a change in its character. First, the coming in 1888 of the main railway line from London to Shoeburyness, and, secondly, a serious depression in the farming industry which led to the splitting up of large agricultural units into small building plots, which were sold off by land development companies or by the farmers themselves.

The purchasers were mainly Londoners who sought escape to the country. The main invasion of Basildon from London came after the first World War, when many people were unsettled and there was a serious housing shortage. Many people wished to move out of London to the country, some for the summer or for week-ends only, others permanently, even at the price of a long daily journey to and from their work.

On the plots which these people purchased were erected houses and other dwellings to meet their various needs, but, unfortunately, in the process, little thought was given to the most elementary principles of town and country planning. Roads and sewers were not laid when houses were erected, and in front of every house the heavy Essex clay was each winter churned into an impassable quagmire. Public utility services came very slowly; many of the buildings were of flimsy construction and, although not originally intended for human habitation, became so used during periods of housing shortage. Shopping centres grew up at Laindon, Vange and Pitsea, and a few clubs and other social amenities were provided. But the result was little better than a rural slum.

This was the area which the planning authorities found impossible to tidy up under their existing powers. At the time when the Minister of Town and Country Planning (as he was then known) was looking for the site of a new town on the east side of London, those authorities, supported by the County Borough Councils of East and West Ham, clamoured for the new town to be established there. After some initial reluctance, the Minister agreed to apply the New Towns procedure to the area.

DESIGNATED AREA

The designated area, at the time of designation, could be divided roughly into approximately 4,300 acres of scattered development, smallholdings and waste lands sold off for development but never built on, and 3,500 acres of farm lands of variable quality.

The area generally is gently undulating, with four-fifths of the land sloping northwards to the River Crouch, the other one-fifth falling more steeply southwards to the River Thames; the area is bisected laterally by the railway line.

Within a radius of 10 miles of the centre of the designated area lie such important Essex towns as Chelmsford, Southend, Brentwood and Romford, and therefore the new town is ideally situated to become a regional centre.

At the time of designation there were in the area approximately 25,000 people, living mainly in two centres of population, Laindon/Langdon Hills/Lee Chapel to the west and Pitsea/Vange/Basildon to the east. The centres of gravity of these two residential areas were approximately three and a half miles apart; there were no east-west roads directly connecting the two areas, and no direct communication by bus, though there was by train.

The designated area is approximately six miles long and nearly three miles wide, and in appearance at the time of designation gave the impression of an elongated dumb-bell.

The Development Corporation were appointed in February, 1949, and their first task was to prepare a master plan for the New Town. They had to be satisfied as to the availability of water and drainage, and on these two matters the Corporation were given reassuring information.

The master plan was prepared by the Corporation and submitted to the Minister on February 16, 1951, providing for an ultimate population of 80,000 people instead of the 50,000 originally envisaged.

PLAN FOR DEVELOPMENT

Accompanying the master plan was a phasing map which provided for development to start on the east side of the designated area and move across westwards, reaching Laindon by 1960 and, in the process, linking up the two existing residential areas referred to earlier and, by the creation of a town centre, welding those two areas into one community.

That is exactly how the development has taken place. The Corporation first of all acquired a farm of poor quality in the north-east corner of the area, and there established the first industrial area. They then started a two-pronged housing drive towards the town centre, using, where possible, open land, but not always being able to avoid some slight interference with existing development.

The legal and other difficulties of this process were enormous in view of the fact that much of the area was split up into small plots, the ownership of many of which could not be and has not so far been traced.

We have also prepared plans for the town centre, the land for which (75 acres) has now been acquired. Unofficially, owing to the high density we are having to provide in our neighbourhood units, the population we are now aiming at is 97,000, but even a higher figure may be reached.

The Corporation started its main sewerage scheme, including the construction of a sewage treatment works, in the north-east corner of the designated area. That sewage works is just completed and the first phase in operation.

So far as housing is concerned, despite the inability to launch a big programme owing to sewerage restrictions prior to the construction of the works, we have to-day built approximately 2,100 houses, with a possible final target of some 20,000.

Industry, after a very slow start, is now easier to obtain, and it will not be long before we have one million square feet of factory space built or under construction, representing 29 factories.

THE FUTURE

It is the duty of a Development Corporation to prepare and bring up to date each year a three-year programme which has to be approved by the Minister of Housing and Local Government, and at the end of last year the Corporation pre-

pared a programme providing for the erection of 6,000 houses in the three years starting April 1, 1955. It also provided for the necessary industry, shops, churches, public-houses and health centres, in order to produce a balanced community.

We are therefore entering on a much more intensive phase of our development. We anticipate that our task will be largely completed 10 years from now —providing no political policy changes intervene or a bad recession occurs.

Although our target population is 80,000, I think it will be exceeded owing to the continual bursting of London at the seams. If, as I expect, we reach 100,000, we will then have constructed a city the size of Northampton. But apart from any planned maximum, nearly all our tenants are young and the proportion of children is rapidly growing, so a natural growth must also be foreseen. The extent of relief which the present target of London New Town populations gives to the Metropolis is only 330,000—not very astronomic compared with the existing population of over eight million!

FIRM'S WITHDRAWAL FROM WATER SCHEME CONTRACT

Managing Director's Statement

THE inference that Ankerdine (Public Works), Ltd., Worcester, had been dismissed from a £300,000 water scheme contract by the Shipston-on-Stour Rural Council was stated on June 1 by MR. MAURICE TAYLOR, the managing director of the firm, to be "untrue." Though his firm had received notice on May 14 of the council's ratification of the withdrawal of the contract, he said, the firm, through its solicitors, had given notice on April 14 ending the contract on the grounds of "frustration, in that it had become impossible to perform according to its terms."

Commenting on the council's announcement that seven days' notice to the firm had been given because it had "failed to proceed with due diligence and has persistently and flagrantly neglected to carry out obligations under the contract," Mr. Taylor said: "I felt it improper at the time to make any statement on the matter. However, the inference that my company has been dismissed from the contract is untrue and cannot be allowed to pass unanswered.

"The chief grounds for giving notice of frustration are the impossibility of laying and joining satisfactorily the 12in. mains, within the limits of the contract, and that the contract became impossible to perform owing to the orders given by and the omissions of, and the method of system laid down by the consultant engineers or their representatives." Mr. Taylor added that the whole matter had been referred to arbitration.

AUSTRALIAN BUILDING

The progress made in Australian building development over the past two years can be gauged from a special issue of the monthly news letter, "Cross-Section," produced and edited at the School of Architecture, Melbourne University. This illustrated report makes interesting reading, and is duplicated in English, French and what appears to be Chinese.

HOUSING EMIGRANT WORKERS

A Talk at the Housing Centre

THE problems attaching to the housing in London of emigrant workers, with special reference to those who have come from the West Indies, were the subject of an address at the Housing Centre recently by MAJOR H. W. WHITE, JP, mayor of Lambeth. Mr. P. L. Leigh-Breese, secretary of the Guiness Trust, was in the chair.

In Lambeth today, said Major White, they had, in a very small part of the borough, well over 4,000 West Indians. They had been coming since 1947, but it was only last year that the problem of accommodating them became apparent and pressing. The general housing problem in the borough was almost as acute as it was on the day the council started on post-war building and, in fact, it was far worse now than he could remember it before the war. The housing list contained 10,000 families. There was no possibility of the council being able to deal adequately with that problem within the confines of the borough.

COLOUR PREJUDICE

The problem of housing the West Indian people was primarily one of colour. Major White pointed out that while people of other nationalities had entered this country in many thousands during and since the war, this fact was not so apparent to us because the great majority of them had white skins like us, whereas coloured people, such as the West Indians, were quickly noticed simply by reason of their colour.

The majority came from Jamaica, where, out of a working population of less than 750,000 there were now 264,000 unemployed. Most of the student types seemed to settle in Paddington and Kensington, but the working-class type gravitated to South London, and Lambeth had received far more of them than any other borough south of the Thames.

In Lambeth, said the mayor, there were hundreds of houses which had very short leases and were on the books of various agents. These houses were being sold for £700 to £800, but were not a good proposition to buy. Many of the coloured people were being misled into buying them with a small deposit and at the end of a year or two they were handed the lease if it was still in existence!

Another aspect of the problem was the bad example set to the coloured people by some landlords who charged the coloured folk exorbitant rents. Some of the West Indians (but only a minority) were acquiring property and doing the same thing to their fellow countrymen. Many were tenants themselves and were sub-letting, crowding people into rooms and making a lot of money with which they later bought a house. Many instances were known of coloured landlords making life very uncomfortable for their white tenants in the hope that they would move out so that coloured tenants could take their place.

There was a lot of prejudice against the coloured folk on the part of white people in the borough, said the mayor.

The problem of housing these coloured people was not confined to Lambeth. It had now spread to other London boroughs and each one must get down to considering a solution of the problem. Ultimately, it must be accepted by the white people that we must get rid of prejudice against coloured people and get used to the new way of life entailed by their presence in our midst.

As far as the coloured people themselves were concerned, their first idea on arriving here was to get a job. These could be found for them in practically every part of the country, but accommodation was quite a different matter. They would take these jobs only if they could find a place to live. The speaker went on to suggest that temporary accommodation should be made available for them in those places where their work was centred.

He explained that he did not mean by that that we should set up the type of camps which we created for the Poles immediately after the war. He meant temporary lodging accommodation, so that men would have, at least for a few nights when they started work, somewhere to live until they could find more permanent accommodation.

SOCIAL CENTRE

Speaking of his personal experience of the coloured people in his borough, Major White said the great majority were decent, well-behaved and hard working. Employers spoke well of them.

He also informed the meeting that it was his ideal to have a social centre in the borough where coloured and white people could meet together in their leisure hours. He had discussed this with the clergy, MPs, and representatives of many societies, and most of them had agreed with him on the general principles of the scheme.

In reply to a question, the mayor said he believed there was an agency in Jamaica which encouraged the coloured people to come here and it was in some way connected with some shipping companies.

A speaker from Birmingham, who said that city had received some 8,000 coloured people fairly recently, suggested that part of the money we spent in housing subsidies should be granted to Jamaica to ease the economic situation there and help to find employment, so that there would not be the necessity or inducement for so many of these coloured people to emigrate. Birmingham City Council had decided against setting up hostels for these people, partly because the people themselves did not want them.

LMBA

Membership of Modular Society

AT the invitation of the President and Council, the LMBA has joined the Modular Society as a "special group." The Society attaches great importance to the influence of site organisation in the development of modular planning, and is anxious to increase the number of its builder members.

The Society was founded in January, 1953, to co-ordinate the dimensions of building materials and equipment in order to reduce building costs. Standardisation of the size of building components has already achieved considerable economies in manufacture.

Donation to BSI

THE LMBA has sent a donation of 25 gns. to the British Standards Institution, in recognition of the valuable work it is doing for the building industry.

CONSTRUCTING AN ATOMIC REACTOR

By J. ANTHONY EDWARDS

THE British Government's recent decision to build a number of atomic reactors in this country lends interest to the construction details and problems of one of America's newest experimental reactors, the CP-5, at the Argonne National Laboratory, Lemont, Illinois. The reactor uses enriched uranium for fuel and is cooled and moderated by heavy water. The core of the reactor is 2 ft. in diameter and in height, and is composed of 17 fuel assemblies located in the centre of an aluminium tank 6 ft. in diameter. This tank is filled with heavy water to a depth of 6½ ft. during operation.

A 2-ft. thick zone of graphite blocks surrounding the tank serves to reflect and moderate neutrons escaping from the heavy water. Outside the graphite, the neutrons and gamma rays are absorbed in a massive shield which constitutes most of the bulk and weight of the reactor. A steel tank lined with boron carbide surrounds the graphite and is in turn encased in concrete 4½ ft. thick. Iron ore mixed in the concrete increases its density and, accordingly, its ability to stop radiation.

The fuel assemblies, which consist of thin plates to allow maximum contact with cooling water, are supported in thin-walled aluminium boxes somewhat resembling organ pipes. Heavy water is pumped up from below, through the fuel assemblies, and out into the main body of the tank near the top. In the basement is a heat exchanger which transfers heat to light (normal) water. In turn, the light water is cooled by causing it to flow through an outdoor cooling tower.

The reactor weighs 600 tons and rests on a concrete pedestal which is in turn supported on undisturbed clay. The pile shield extends downward in order to complete the shielding required for the basement areas.

The inner parts of the pile are supported on steel billets, measuring 3 in. by 12 in., which are embedded in the concrete shield. Loose pieces of boral, boron carbide and a ¼-in. thick covering of aluminium completely cover the billets. The aluminium tank containing the heavy water rests on machined graphite laid on the boral. A round shield weighing 20 tons rests on the graphite round the tank.

The top shield plug has a separate centre-piece; it has holes that are accurately aligned with those in the fuel assembly in the inner shield plug below, and rests on the top of a 10-ft. diameter steel shell.

SEALING THE OPENINGS

The bottom of the steel shell is welded to the billets, and a strip of steel welded to recessed surfaces of the billets complete the bottom seal. The openings which penetrate the strips of steel, the steel shell, and the diaphragm are sealed by a variety of methods.

The graphite zone is in an atmosphere of helium, so that the parts of experimental equipment near the reactor core can be cooled, in many instances by heat conduction across a helium gap between the thimbles and the surrounding tube sections which form parts of the aluminium tank holding the heavy water.

The graphite is cooled by conduction. Most of the heat ultimately reaches the water-cooled coils in the 3½-in. thick layer of lead which surrounds the graphite zone. Thus, there are coils in the lead at the bottom of the annular shield taking heat from the top of the graphite, and coils in the lead between the billets taking heat from the bottom of the graphite.

There are cooling coils in the lead at the bottom of the inner shield plug about 3½ ft. above the reactor core. The weighting plugs of the fuel assemblies are cooled by a close fit to the inner shield plug liners. Shim safety rod shafts and bearings are cooled by conduction through the signal arms which remain permanently dipped into the heavy water.

THERMAL EXPANSION

A problem was that thermal expansion of the aluminium tank tended to flex the ¼-in. thick stainless steel diaphragm over the annular shield; bellows between the annular shield liners and the diaphragm were therefore used to provide seals and expansion joints at vertical holes penetrating the graphite. The annular shield itself rides up and down as the temperature of the graphite changes. The bearings of the shim safety rods are mounted on a grid structure in the aluminium tank, so that allowance is made for the 9-ft. shafts to move up and down by means of clearances in the spline-type of engagement at the inner end and by means of self-aligning ball bearings near the outer ends.

Outside the regions of significant heat release is the so-called biological shield. This is constructed of iron-bearing concrete of sufficient thickness to permit people to work around the reactor. The radiation which escapes is far below what is permissible for the complete safety of personnel.

The outer shield is 4 ft. 8 in. thick. The many penetrations of the shield for experimental devices allow only scattered radiation to by-pass a small thickness of the bulk shield.

The outside appearance of the reactor does not correspond to the exact shape of required shielding. A better picture is obtained by imagining a cylinder with slightly rounded ends, similar in shape to a pressure tank and with the diameter equal to the height. The extra spaces within the outline of the octagonal prism afford locations for recessing auxiliary ducts and equipment. Thus, a shielding setback at the top of the pile provides an enclosed shelf 2 ft. deep and 3 ft. high for a dozen drive packages which actuate gauges and shutters on experimental openings. Junction boxes, thermal shield piping manifolds, and vertical experimental hole cooling lines are also concealed in this space. The continuations of these cooling lines to the vertical experimental holes are laid in ducts under the top of the pile.

The extra spaces at the corners of the octagon are utilised as vertical air ducts; they draw 6,000 c.f.m. of air toward the reactor. The extra thickness of the biological shield, to allow for imperfections, is utilised by providing pipes for an internal venting system for each of the main experimental openings. With normal precautions this system prevents escape of radio-activity into the room.

BIRMINGHAM'S OVERSPILL

Large Housing Programme

A FIVE-YEAR building programme envisaging the erection of 12,650 houses in neighbouring areas is one of the suggestions for dealing with Birmingham's overspill problem which has been put to Birmingham by Staffordshire County Council.

It is proposed that 7,710 houses should be built by local authorities and 4,940 privately in the Aldridge, Lichfield, Tamworth, Rugeley, Tutbury, Uttoxeter, Brownhills, Cannock and Stafford districts.

Similarly, the county council has suggested an extension of its scheme catering for Wolverhampton's overspill (already in operation at Wednesfield and Seisdon) to include sites in Cannock rural district and in Sedgley and Tettenhall urban districts, providing for a total of 8,354 houses.

Overspill in south- and mid-Staffordshire is now put at 125,300—43,000 from Birmingham, 40,000 from Wolverhampton, 21,600 from Walsall and 3,700 from Dudley, with a total of 17,000 from the county districts of Bilston, Tipton, Rowley Regis, Wednesbury and Amblecote.

A memorandum on the implementation of the proposals, prepared by the county planning and development officer and approved by the county overspill committee, speaks of the need for a review of the county boroughs' development plans, having regard to the new regulations for site requirements for schools and the Ministry's changed emphasis in housing policy.

Such a review, it states, "might lead to a significant reduction" in the size of the overspill problem from the county boroughs. It also urges some action "to restrict the expansion of industry in the congested areas parallel with the development of industry in the reception areas and to discourage the admission to local housing application lists of immigrants into the congested towns."

Among other points mentioned in the memorandum is the importance of working out satisfactory arrangements, in consultation with the overspill and reception authorities, whereby private housing can contribute fully towards a solution of the overspill problem.

Emphasis is laid on the importance of making progress as soon as possible with the proposals for dealing with Birmingham's overspill while conditions of economic expansion in the Midlands continue and before the price of land tends to rise still further; and on the need for a decision on the arrangements to be made for operating schemes under the Town Development Act, 1952, and the way in which the council's overspill scheme may need to be modified to bring it into harmony with such plans.

THE UNEXPLAINED ACCIDENT AND THE BUILDING REGULATIONS

A Warning to Contractors

By a Legal Correspondent

ONCE more the Building Regulations are the subject of litigation before the Courts, and the recent case of *Hughes v. McGoff and Vickers, Ltd.* (1955) IWLR416 will be of interest to many for it decides what is the law when the inexplicable accident occurs and the employers are in breach of the Building (Safety, Health and Welfare) Regulations, 1948.

In this case the facts are strange as the reason for the accident was never explained, and because of this and the failure of McGoff and Vickers, Ltd., the defendants, to apply the Building Regulations in the course of their working they had to pay damages to the plaintiff.

McGoff and Vickers, Ltd., electrical contractors, were engaged, under subcontract, on installing electrical apparatus in a workshop which was at the time being built. The defendant's work consisted *inter alia* of the laying of electric power cables; these cables ran in conduit pipes which were fitted high up and scaffolding was used on which the electricians worked.

Owen Hughes was employed as an electrician by the defendants and on March 23, 1953, he was working on the floor of the workshop when a steel pipe 12ft. long and about an inch in diameter fell 30ft. from the lowest tier of the scaffolding, struck Hughes and killed him.

The evidence was that the pipe had been placed on a platform on the scaffolding by one of the dead man's mates about an hour before the accident. It had been set in a lengthwise position on the platform which was about 5ft. to 6ft. wide consisting of strips of planks supported by crosspieces at intervals; on the outside vertical scaffold poles were placed every 4ft. but the platform inclined inward slightly and there were no protective toe boards round either the inside or outside edges. The planks, though lying side by side, were not fixed together and at a variety of places there were gaps between planks, but only from one to three inches wide and of no great length.

UNEXPLAINED FALL

For some reason a pipe had been kept on the platform for several months prior to the accident, and during that time nothing untoward had occurred; and even when all the evidence at the trial had been heard, it was still unexplained as to why the pipe should have fallen at the time it did, or at all.

The plaintiff in the action was the administrator of the deceased's estate who sued for damages to be paid to that estate. The trial was at Liverpool before Mr. Justice Ashworth last February.

The plaintiff alleged that the defendants were in breach of their duty at Common Law but this allegation was unsuccessful. The next line of attack was that the defendants failed to carry out Regulations 22(a) and 24(1) of the Building (Safety, Health and Welfare) Regulations 1948 which, so the plaintiff said, governed the work on which the dead man was engaged. The defence agreed that they had not complied with the Building Regulations but said that the Regulations did not apply to this type of work which was not constructional in character. They went further than this and said that whether or not the Regulations applied, did not matter because the accident had nothing to do with their failure to comply with the Regulations.

THE JUDGMENT

Delivering judgment, Mr. Justice Ashworth said that the pipe's fall was a mystery and in the absence of any explanation he was compelled to draw the conclusion that it fell from the inner side of the platform having rolled down the slight incline and in some unexplained way had succeeded in penetrating the gap between the edges of the boards and their support on the inner side, and had so fallen to the ground.

The judge then put the issues very shortly in saying that the Building Regulations gave rise to three separate questions: (a) Did they apply? (b) Was there a breach? and (c) Was the breach a cause of the accident? In deciding whether the Regulations applied, he was guided by the case of *Elms v. Foster Wheeler, Ltd.*, which stated that a distinction had to be drawn between being engaged in an integral part of the construction of a building as opposed to merely putting something into a building which was in the process of being constructed. In the former event the regulations would apply; in the latter they would not. His Lordship added that it was quite impossible to hold that the defendants' task was merely putting something into a building, as opposed to furthering its construction and that therefore the Regulations applied, the work coming within Regulations 2 and 4 (these lay down the type of work to be governed by the Regulations).

The Judge then went on to consider the admitted breach of Regulations 22(a) and 24(1). The former stipulates that planks must be closely boarded, the latter that toe boards must be provided to prevent persons, materials and tools falling from scaffold platforms over 6½ft. in height. His Lordship came to the conclusion that the breach of Regulation 22(a) could not be the cause of the accident in view of his finding that the pipe had slipped over the inner edge of the platform.

Whilst it was admitted by the defendants that Regulation 24(1) had been broken, their counsel strongly urged that the absence of toe boards could not be a factor in the case for no one saw the pipe roll off the platform, and thus there was no evidence that lack of toe boards contributed or was an effective cause of Hughes' death. But the judge held that once it was shown there was a breach of Regulation and that the Regulation broken was the one which was made to prevent the very accident which had occurred, then it was for the defendants to prove that this breach of the Regulation was not the cause of the accident. This the defendants were unable to prove as the falling of the pipe remained unexplained, thus the plaintiff succeeded in his claim and was awarded £392 6s. 6d. damages.

It will at once be noticed in this case that the plaintiff was not able to prove that the defendants provided an unsafe system of working which caused the accident. This is normally essential when employers are being sued for industrial injuries. The plaintiff proved what was admitted, namely, that the defendants broke a Regulation; whether this was the cause of the accident will never be known. The main line of defence was quite simply that the Building Regulations did not apply, and building contractors are often in doubt as to whether the Regulations should apply to any particular work. If in doubt it is safest to assume they do apply for it costs little to take the standard precautions which are designed to prevent accidents, and have proved most successful since their introduction.

RIBA FORM OF CONTRACT

Recommendations Affecting Nominated Sub-Contractors

THE Practice Committee of the RIBA have endorsed Practice Note 20, published by the Joint Contract Tribunal. The Practice Committee recommend that in addition to informing each nominated sub-contractor of the amount included for him in a certificate issued to the contractor as recommended in Practice Note 20, the architect in issuing a certificate to the contractor under clause 24 of the contract should direct the contractor in writing to pay to the nominated sub-contractors the sums included in the certificate for them.

The Practice Committee, in giving this opinion, strongly recommend members to adopt these practices where they do not already do so. The first recommendation will enable the nominated sub-contractor to have information to which he is entitled, and the second recommendation will facilitate any action that may arise under clause 21(*c*) of the contract.

WOODWORKERS' PAY

ASW Seek Increase

THE annual conference of the Amalgamated Society of Woodworkers at Blackpool on May 31 gave the executive council a free hand in wage negotiations to take place in November in the National Joint Council for the Building Industry. Mr. John Hill, a member of the executive, said they would press for an increase of at least fourpence an hour.

The Builder

CURRENT PRICES OF MATERIALS

THE information given on these pages has been specially compiled for *The Builder* and is copyright. It is the intention that the details given should indicate fair average prices of materials, not necessarily the highest or the lowest. The prices apply to large quantities of materials loaded at works, delivered at London Stations or at site in London Area as stated. Prices for smaller quantities ex merchants warehouse will necessarily be higher so as to include the stocking and handling costs involved. Due to the exceptional circumstances now prevailing it is recommended that the prices of materials should be confirmed by inquiry from suppliers and merchants.

AGGREGATES AND SAND

Delivered site in full lorry loads. Average of prices for Boroughs of Westminster, Paddington, Holborn and St. Pancras.

		£	s.	d.
Pit Ballast	per yd.	1	4	6
Pit Sand	„	1	2	11
Washed Sand	„	1	5	1
¾ in. Shingle	„	1	1	5
¾ in. Broken Brick	„	1	0	0
Pan Breeze	„		10	3
Fine or Coarse Foamed Slag Aggregate ... ... 2 yds. of fine and 2.6 yds. of coarse per ton	per ton	3	0	9

CEMENT, etc.

Including non-returnable jute sacks or paper bags.

		£	s.	d.
Best British Portland Cement. Standard Specification delivered Charing Cross area.				
6-ton loads and upwards, site	per ton	4	16	6
1 to 6 tons, site	„	5	8	6
Rapid Hardening Cement in 6-ton loads and upwards to site	„	5	4	6
1 to 6 ton do. site	„	5	16	6
Aquacrete Water Repellent Cement. 32s. 6d. per ton on ordinary cement prices.				
Red, Buff or Khaki Colorcrete in 6-ton lots	„	6	18	0
Other colours according to colour.				
In 4-ton lots from 211s. 9d. to 435s. 9d. per ton.				
White Portland Cement	„	12	17	0
Under 1 ton	per cwt.		15	4
417 Cement (Ultra Rapid Hardening) in 6-ton lots and upwards	per ton	6	9	0
Super Cement (Waterproof), 32s. 6d. per ton above Portland Cement.				
Cullamix Tyrolean Finish, £9 4s. 3d. to £10 17s. 9d. (1-ton loads and upwards).				
Lightning and Ciment Fondu Brands High Aluminous cement, 6-ton lots and up	„	14	0	9
Stourbridge Fireclay, 6-ton loads at Railway Depot, London	„	6	2	3

BRICKS

Full Loads.

		£	s.	d.
First Hard Stocks	per 1,000	11	7	0
Second Hard Stocks	„	10	11	0
Mild Stocks	„	8	16	6
All loaded free into lorry at the works. The question of haulage is still very difficult and prices must be obtained from job to job.				
2½ in. Nominal Fletton Bricks to sites in W.C.				
District Commons	„	5	13	0
Cellular do.	„	5	13	0
Keyed do.	„	5	15	0
Rustics	„	6	18	0
Cellular Rustics	„	6	18	0
Single Bullnose do.	„	6	13	0
Sandfaced	„	7	13	0
Best Blue Pressed Staffs (London Stations)	„	24	19	6
Do. Bullnose (London Stations)	„	25	13	6
Blue Wire Cuts (London Stations)	„	22	11	0
Midhurst Lime Bricks (London Sites)	„	10	3	0
Uxbridge Whites (London Sites)	„	9	6	6
Special Purpose Sandlime Bricks (London Sites)	„	7	14	0
2½ in. Best Stourbridge Fire Bricks (London Stations)	„	24	6	0
3 in. do. (London Stations)	„	29	3	3
2½ in. Machine - made Sandfaced Red Facings (London Sites)	„	13	19	6
2½ in. Machine-made Multi Red Facings (London Sites)	„	14	4	6
2½ in. Hand-made Sandfaced Red Facings (London Sites)	„	14	11	0
2½ in. Hand-made Sandfaced Multi-Colour Facings (London Sites)	„	14	11	0
Hand-made Sandfaced Cherry Red Facings. Berkshire district (London Sites)	„	17	5	6
Hand-made Sandfaced Multi-Colour Facings. Berkshire district (London Sites)	„	17	5	6
Rubber Bricks for gauged arches (London Sites)	per 1,000	41	10	0
2½ in. Surrey Clamp Burnt Multi Stock Facings (London Sites)	„	13	6	0
2½ in. Surrey Kiln Burnt Multi Stock Facings (London Sites)	„	14	4	6
Glazed Bricks (London Sites), White, Ivory, Brown—				
Stretchers	„	64	0	0
Headers	„	63	0	0
Quoins, Bullnose and 4½ in. Flats	„	80	0	0
Double Stretchers	„	85	0	0
Double Headers	„	77	10	0
One side and two ends	„	87	0	0
Two sides and one end	„	89	10	0
Splays and Squints	„	83	0	0

Cream and Buff £3 extra over White. Other colours, hard glaze, £8 10s. 0d. extra over White. All above prices plus 7½% for Best quality and plus 7½% less 10% for Second quality.

PARTITION SLABS, etc.

Delivered Central London Area.

HOLLOW CLAY PARTITION BLOCKS (Keyed)

	Minimum lorry loads.		£	s.	d.
*2 in.	140 yds.	per yd. sup.		4	3
*2½ in.	140 yds.	„		4	6
*3 in.	120 yds.	„		5	2

BUILDING BLOCKS (Keyed)

*4 in. (6 cavity)	95 yds.	„		6	7
6 in. (8¾" × 5¾")	1250 Blocks	per 1000	25	14	0

*Half blocks at no extra charge.

CLINKER CONCRETE

2 in.	100 yds.	per yd. sup.		3	7
2½ in.	85 yds.	„		4	2
3 in.	75 yds.	„		5	0
4 in.	55 yds.	„		6	2

CRANHAM

2 in.		„		6	8
2½ in.		„		7	4
3 in.		„		8	7
4 in.		„		10	7
4½ in. Load bearing quality		„		11	8

FLOOR BLOCKS and FILLER TILES

3 in. Floor Blocks 12 in. by 12 in. delivered in full lorry-loads		per 1,000	32	11	0
4 in. do.		„	34	18	0
5 in. do.		„	41	11	0
6 in. do.		„	46	16	0
7 in. do.		„	56	18	0
8 in. do.		„	66	14	0
10" × 3" × ¾"	Filler Tiles in multiples of 10 tiles	per 1,000 multiples	56	2	0
12" × 3" × ¾"	do. do.	„ „	63	17	0
10" × 4" × ¾"	do. do.	„ „	69	14	0

STONEWARE DRAIN PIPES, etc.

The following are the percentages to be added to the Standard List prices delivered London Area.

	Over 2 tons	Over 100 Pieces under 2 tons	Under 100 Pieces under 2 tons
Best Quality	+67½%	+97½%	+107½%
B.S.S. Best do.	+10%+67½%	+10%+97½%	+10%+107½%
Tested Quality	+37½%+67½%	+37½%+97½%	+37½%+107½%
B.S.S. Tested do.	+47½%+67½%	+47½%+97½%	+47½%+107½%

		£	s.	d.
3 in. Land Drain Pipes (in 12 in. lengths)	per 1,000	10	13	6
4 in. do.	„	14	2	0

STONE

		£	s.	d.
Bath Stone—				
Monks Park	per ft. cube		7	10
St. Aldhelm Box Ground	„		8	10
Delivered in railway trucks at South Lambeth B.R. Western Region				
Doulting Stone Random Blocks. Delivered London area	„		8	7
Beer Stone. Delivered London area	„		8	0
Portland Stone—				
Brown Whitbed in random blocks, 20 ft. average delivered in railway trucks at Nine Elms, B.R. Southern Region	„		8	1½
Yorkshire Stone—Blue Robin Hood Quality. Delivered to site London in 6-ton lots.				
9 in. × 3 in. Rubbed, weathered, throated and stooled cills	per ft. cube	3	10	8
12 in. × 6 in. do. do.	„	2	10	6
12 in. × 3 in. Plain coping, twice throated	„	1	19	0
12 in. × 3 in. Weathered and twice throated coping	„	2	12	0
14 in. × 6 in. do. do.	„	2	7	0
4½ in. × 9 in. Plinth, rubbed on top and face	„	2	2	0
3 in. sawn two sides Slabs, random sizes	per ft. sup.		7	6

STONE—*continued*

		£ s. d.
Templates and Cover Stones, 3 in., 4 in. and 6 in. thick, edges coped for rendered brickwork ...	per ft. cube	1 5 9
Do. do. fair one edge for fair faced brickwork		1 10 6
Hard York—		
12 in. × 2 in. Square Steps, rubbed on top and edge	per ft. run	9 0
14 in. × 3 in. Round-nosed Steps, rubbed on top and front	per ft. cube	2 8 0
12 in. × 6 in. Plain Steps, rubbed top and front ...	„	2 2 0
2 in. Rubbed and Jointed Paving, given sizes ...	per ft. sup.	8 6
2 in. Sawn Paving, edges squared, in random sizes	per yd. sup	2 19 3

TILES AND PANTILES

Delivered London area by road in 6 tons or over per 1,000

	£ s. d.
Machine-made Pantiles and French pattern Tiles from Lincolnshire district	29 8 0
Hand-made Pantiles Berkshire district	49 18 0
Hand-made Double Roman Bridgwater district	58 13 6
Hand-made 10½ × 6½ tiles Berkshire district	13 18 9
Machine-made 10½ × 6½ Staffordshire district	13 8 9
Hand-made Hip and Valley tiles per doz.	1 10 0
Machine-made Hip and Valley tiles do.	1 8 0
Concrete tiles 10½ × 6½	7 14 6
do. Interlocking (49S)	18 9 6

NOTE.—Breakage in transit, purchasers' responsibility.

SLATES

First-quality Slates from Penrhyn or Portmadoc, carriage paid in full truck loads to London Rate Station. Per 1,000 actual

	£ s. d.
24 × 12	124 6 4
22 × 12	103 3 8
22 × 11	93 4 6
20 × 12	88 0 0
20 × 10	82 1 0
18 × 10	59 6 6
18 × 9	52 0 0
16 × 10	48 16 0
16 × 8	38 0 0

NOTE.—Breakage in transit, purchasers' responsibility.

TIMBER

				£ s. d.
Softwood—				
Joinery quality	Ex. Wharf	per standard		£110 to £130
Carcassing quality	do.	„		£98 to £102
1 in. Tongued and Grooved Flooring	do.	„		£108 0 0
Hardwood—				
Mahogany—African S.E. ...	do.	per ft. cube		1 10 0
do. Honduras do. ...	do.	„		3 5 0
Oak European do. ...	do.	„		2 5 0
do. Japanese do. ...	do.	„		2 10 0
do. English Logs sawn ...	do.	„		1 15 0
Teak 8 in. average S.E. ...	do.	„		3 5 0
Walnut African Logs sawn ...	do.	„		1 5 0

DOORS (in Lots I-11)

Delivered London area.

		£ s. d.
1½ in. 4 Horizontal Panel Pattern 4 in. deal		
2 ft. 0 in. × 6 ft. 6 in.	each	1 12 0
2 ft. 3 in. × 6 ft. 6 in.	„	1 13 0
2 ft. 6 in. × 6 ft. 6 in.	„	1 14 0
2 ft. 9 in. × 6 ft. 6 in.	„	1 16 6
2 in. do. but top panel open. Pattern 4 × G in deal		
2 ft. 6 in. × 6 ft. 6 in.	„	2 9 0
2 ft. 9 in. × 6 ft. 6 in.	„	2 11 6
2 in. Panel, top panel open. Pattern 2 × G in deal		
2 ft. 6 in. × 6 ft. 6 in.	„	2 1 9
2 ft. 9 in. × 6 ft. 6 in.	„	2 3 6

SUNDRIES

Delivered London area

		£ s. d.
1 in. Wood Wool Slabs, 6 ft. 0 in. × 2 ft. 0 in. in quantities of 1 ton (89 yds. to 1 ton)	per yd.	5 8
1½ in. do. (67 yds. to 1 ton)	„	7 4
2 in. do. (52 yds. to 1 ton)	„	8 11½
2½ in. do. (45 yds. to 1 ton)	„	10 3
3 in. do. (39 yds. to 1 ton)	„	11 5½
Quantities under 1 ton add 1d. per ½ in. of thickness.		
½ in. imported insulation Board, quantities over 5,000 sq. ft.	per 100 sq. ft.	2 2 6
¼ in. Hardboard do.	„	2 1 6
⅛ in. do. do.	„	3 2 6
⅛ in. Asbestos Flat Building Sheets	per yd. sup.	3 5
Roofing Felt, 1-ply	„	1 6
do. 2-ply	„	1 9
Best Scotch Glue, in slabs	per ½ cwt.	5 0 0
do. pearl	„	5 5 0
Croid Glue	28 lb.	2 6 0
Cut Nails 3 in. (1-ton lots)	per ton	58 5 0
do. 4 in. and up (1-ton lots)	„	54 15 0
Wire Nails, 3 in. (4-cwt. lots)	per cwt.	2 16 3
do. 4 in. and up (4-cwt. lots)	„	2 12 9

METALS

Steel Joists, Etc.

		£ s. d.
Basis Joists—		
6 in. × 5 in., 8 in. × 5 in., 8 in. × 6 in., 10 in. × 6 in. 12 in. × 6 in. plain cut to lengths delivered London area	per ton	39 0 0
Extra for sizes		
3 in. × 1½ in. 4 in. × 1½ in.	„	3 10 0
3 in. × 3 in.	„	2 10 0
4 in. × 3 in., 10 in. × 4½ in.	„	1 10 0
5 in. × 2½ in., 5 in. × 3 in.	„	1 15 0
4½ in. × 1½ in.	„	3 5 0

				£ s. d.
5 in. × 4½ in.	7 in. × 3½ in.	13 in. × 5 in.	... per ton	2 15 0
6 in. × 3 in.	24 in. × 7½ in.	... ...	„	2 0 0
6 in. × 4½ in.	7 in. × 4 in.	8 in. × 4 in.	... „	1 5 0
9 in. × 4 in.	10 in. × 5 in.	... ...	}	1 0 0
12 in. × 5 in.	22 in. × 7 in.	... ...	}	
9 in. × 7 in.	10 in. × 8 in.	12 in. × 8 in.	}	10 0
14 in. × 5½ in.	14 in. × 6 in.	14 in. × 8 in.	}	
15 in. × 5 in.	15 in. × 6 in.	16 in. × 6 in.	} „	
16 in. × 8 in.	18 in. × 6 in.	18 in. × 7 in.	}	
18 in. × 8 in.	20 in. × 6½ in.	20 in. × 7½ in.	}	
Steel angles average price			„	40 15 0
Steel tees average price			„	41 15 0
Fabricated work delivered London—				
R.S. Joists cut and fitted			„	55 10 0
Compound girders			„	61 0 0
Stanchions			„	66 10 0
Compound stanchions			„	70 5 0
In Roof Work—Trusses and Purlins			„	83 0 0
Average prices not for awkward work.				
Mild Steel Ferro-Concrete bars to BSS785 ex London				
Stock ⅜ in. diam., and upwards			„	40 6 0
¼ in. diam.			per ton extra	4 7 0
⅛ in. do.			„	3 7 0
⅜ in. do.			„	2 9 6
½ in. do.			„	1 12 0

Mild Steel Tubes

Tubes to BSS1387 and Fittings. List prices and following discounts:

Galvanised Tube—	W.I. Fittings	Malleable Fittings
Class A NET		
Class B + 9½%	Light + 28½%	Malleable List—32½% + 40%
Class C + 25½%	Heavy + 36%	
Black—		
Class A − 21½%		
Class B − 11%	Light + 15½%	Malleable List—32½%
Class C + 1½%	Heavy + 23½%	

C.I. Half-round Gutters

Delivered London per yd. in 6-ft. lengths

	Gutters	Nozzles	Stop Ends
3 in.	3/4½	3/-	/10
3½ in.	3/8	3/3	/10
4 in.	4/9	3/8	1/3
4½ in.	5/2½	4/1	1/6
5 in.	5/9½	4/5	1/10

C.I.O.G. Gutters

3 in.	4/4½	3/11	1/-
3½ in.	4/10½	3/11	1/3
4 in.	5/4½	4/1	1/6
4½ in.	5/9½	4/8	1/10
5 in.	6/4½	5/5	2/1

C.I. Rain-water Pipes

Per yd. in 6-ft. lengths	Pipe	Bends	Branches
2 in.	7/2½	3/8	5/4
2½ in.	7/2½	4/1	7/1
3 in.	8/1½	5/2	7/8
3½ in.	9/3	6/1	9/3
4 in.	10/8	7/4	10/11

L.C.C. Coated Soil Pipes

2 in.	8/2½	6/4	7/8
2½ in.	8/7½	7/-	9/7
3 in.	9/8	7/8	11/7
3½ in.	10/10	9/7	13/7
4 in.	12/4	10/8	15/8

Above prices for gutters, rain-water and soil pipes for under 5 cwt. lots only. Lots over 5 cwt. see List No. 3300 dated February 1, 1955, plus 2½% and tonnage allowance. 4-ton lots 5 per cent, 2-ton lots 2½ per cent.

L.C.C. Coated Drain Pipes In 9-fts.

	cwt.	qr.	lb.	per yd.	Bends	Branches
4 in.	1	1	17	25/8	18/3	32/6
6 in.	2	0	1	38/1	48/6	77/9

Asbestos Rain-water Pipes and Fittings

All less 17½ per cent. discount.

		2 in.	2½ in.	3 in.	4 in.
Pipes 6-ft. lengths ...	per yd.	3/9	4/-	4/10	6/5
Shoes	each	2/5	2/8	3/2	4/3
Single Branches ...	„	3/9	4/6	5/4	7/6
Bends square or obtuse	„	2/8	2/11	3/9	5/4
Swan Necks 4½ in. proj.	„	2/11	3/9	4/3	5/11
do. 6 in. do.	„	3/2	3/9	4/10	6/5

Asbestos O.G. Gutters and Fittings

		4 in.	4½ in.	5 in.	6 in.
Gutters 6-ft. lengths ...	per yd.	3/7	3/11	4/8	5/7½
Drop ends	each	2/10	3/4	3/10	4/7
Stop Ends	„	/10	/11	1/-	1/2
Angles	„	2/11	3/5	4/1	4/10
Nozzles	„	2/10	3/4	3/10	4/7
Union Clips	„	1/5	1/8	2/1	2/5

Asbestos Half-Round Gutters and Fittings

		3 in.	4 in.	4½ in.	5 in.	6 in.
Gutters 6-ft. lengths ...	per yd.	2/6	2/11½	3/0½	3/7	5/-
Drop ends ...	each	2/1	2/5	2/8	2/11	4/3
Stop ends	„	/9	/10	/11	1/-	1/2
Angles	„	2/5	2/8	2/11	3/2	4/3
Nozzles	„	2/1	2/5	2/8	2/11	4/3
Union Clips	„	1/-	1/1	1/2	1/4	2/-

METALS—*continued*

	Per ton basis in London £ s. d.
Iron—Staffordshire Crown Merchant Quality	42 17 6
Mild Steel Bars	37 14 0
Mild Steel Hoops	39 1 0

	Ex Merchant's Stock per ton Two-ton lots £ s. d.
Soft Sheets C.R. and C.A.—	
20 gauge	49 6 0
24 gauge	51 16 0
26 gauge	54 16 0
Galvanised Corrugated sheets 6 ft. to 9 ft.—	
20 gauge	56 6 6
24 gauge	59 16 6
26 gauge	65 1 6
Galvanised Flat sheets C.R. and C.A.—	
20 gauge	57 16 6
24 gauge	61 6 6
26 gauge	66 11 6

PLUMBERS' BRASS WORK, COPPER, ZINC, ETC.
Delivered in London area.

All per doz.	M.O.H. ½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
Screwdown bib cocks Crutch head for iron	87/–	128/8				
Toilet bib cocks for iron	109/–	158/5				
Screwdown stop cocks for iron	66/–	95/9	188/–	363/–	522/6	917/6
do. with two unions for lead	89/–	132/–	234/4	472/–	623/6	1389/6
Double nut boiler screws	18/8	26/5	47/6	48/6	67/–	93/6
Heavy Croydon ball valves	77/–	193/6	312/5	568/8	734/10	—
Plumbers' union brass lead to iron	19/6	23/6	38/6	52/10	70/6	165/–
	1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
Caps and screws	33/–	40/8	59/6	92/5	118/10	155/3
Brass sleeves			31/11	31/11	56/2	74/10	91/5
			1½ × 6 lb.	1½ × 6 lb.	2 × 7 lb.	3 × 7 lb.
Lead P. trap with brass cleaning screws	63/6		79/6	127/–	217/3	
Lead S. trap do.	77/–		95/–	156/3	281/–	

		s. d.
Solder		
Plumbers'	per lb.	3 0
Tinmen's	,,	3 8
Blow pipe	,,	3 9

Copper tubes BSS 659/1944 on the basic price of 39½d. per lb. plus gauge and manufacturing extras as follows. Minimum quantities, 3 cwt.

	Extra d.		d.
⅛ in. × 19 gauge	12¾	Total per lb.	52¼
¼ in. × 19 ,,	11⅛	,, ,,	50⅝
1 in. × 18 ,,	9⅝	,, ,,	49⅛
1¼ in. × 18 ,,	9	,, ,,	48⅛
1½ in. × 18 ,,	9	,, ,,	48⅛
2 in. × 17 ,,	10⅝	,, ,,	50⅛

		£ s. d.
Rolled Copper sheets up to 48 in. wide, basic price plus gauge and manufacturing extras	per ton	347 15 0
Sheet Zinc 10 gauge (25 SWG) 5 cwt. lots upwards	per cwt.	8 6 3
do. 12 gauge (23 SWG) do.	,,	8 4 6
do. 14 gauge (21 SWG) do.	,,	8 3 6
Brass tubes basic price, plus gauge and manufacturing extras	per lb.	2 7⅛

LEAD SHEET AND PIPES

Basis selling price in minimum one-ton delivery to one address in London or Home Counties.

		£ s. d.
Lead Sheet, English, 3½ lb. substance and upwards	per ton	140 5 0
Lead Water Pipe in coils	,,	141 10 0
Lead Soil Pipe 10 ft. or over 2 in. to 4 in. dia.	,,	143 0 0
do. over 4 in. dia.	,,	145 0 0
Lead Gas or Untinned Compo pipe	,,	143 0 0
Extras over Basis for quantities under 1 ton		
5 cwt. and under 1 ton	per cwt.	2 0
3 cwt. do. 5 cwt.	,,	4 0
1 cwt. do. 3 cwt.	,,	6 0

Smaller quantities than 1 cwt. priced specially.
Supplying sheet lead and lead pipe to less than basis weights and cutting to sizes less than basis charged extra according to current trade schedule.
Allowance for Old Lead, collected £99 0s. 0d. per ton weighed at buyer's works.

PLASTER, etc.

		£ s. d.
Coarse Pink in 1-ton. loads and over Delivered on Site	per ton	7 11 9
do. White do. do.	,,	7 19 6
Sirapite Coarse do. do.	,,	7 14 3
do. Fine do. do.	,,	8 2 3
Blue Lias Lime in 6-ton loads	,,	6 9 6
Hydrated Lime do.	,,	5 12 6
Lump Lime do.	,,	5 2 0
White Keen's or Parian Cement in 1-ton loads	,,	10 12 0
Pink Keen's or Parian Cement in 1-ton loads	,,	10 6 6
Granite Chips in 6-ton loads	,,	2 6 9
Hair	per cwt.	4 17 6
Gypsum Plaster Lath or Base Board ⅜ in. thick 600 yds. and over in one delivery. Delivered site	per yd.	2 3
1,200 yds.	,,	2 2½
Gypsum Plaster Wall Boards, 3 and 4 ft. wide 6 to 12 ft., ½ in. thick, 600 yds. and over in one delivery. Delivered site	,,	2 6
1,200 yds.	,,	2 5½

PAINT AND DISTEMPER

Delivered London area		£ s. d.
Ceiling Distemper	per cwt.	1 7 6
Washable Distemper	,,	5 5 0
Gloss Paint	per gal.	2 10 0
Snowcem cement paint (in 1 cwt. drums)	per cwt.	3 11 0

LEAD PRODUCTS AND OILS.

Ground White Lead, 1 cwt. kegs	per cwt.	8 18 0
Genuine White Lead Paint, 1-19 gal. lots in 1 gal. tins	per gal.	3 2 0
Genuine Red Lead, Dry, 1 cwt. keg	per cwt.	6 19 3
Genuine Linseed Oil Putty, 1 cwt. keg	,,	2 11 0
Size XD quality, 28 lb.	per tin	9 0
Raw Linseed Oil (5 gal.) drums extra	per gal.	12 0
Boiled Linseed Oil (5 gal.) do.	,,	12 6

SUNDRIES.

Turpentine substitute (5 gal.) drums extra	,,	5 6½
do. do. (40 gal.) do. do.	,,	4 8½
Solignum, Brown (5 gal. cans) Exterior	,,	6 6
Creosote (40 gal. barrels)	,,	2 0
Paste Powder (1 lb. packets)	per lb.	1 6
White Lining Paper	per piece	1 0

VARNISHES, etc.

Delivered London area		£ s. d.
Oak Varnish, Outside or Inside	per gal.	1 12 6
Oak Pale Copal do.	,,	1 18 6
Hard Drying Oak for Inside	,,	2 0 0
Crystal Paper Varnish do.	,,	2 0 0
Eggshell Flat Varnish do.	,,	2 14 0
Finest Carriage Varnish	,,	2 10 0
Front Door Varnish	,,	2 0 0
Japan Gold Size	,,	1 12 6
Black Japan	,,	1 14 0
Brunswick Black	,,	1 10 0
Berlin Black	,,	1 5 0
Terebene	,,	1 8 0
Knotting (1 gal. bottles free)	,,	2 2 0
French and Brush Polish (do.)	,,	1 18 0

GLASS

Delivered London area	Per ft. super s. d.
18 oz. Sheet Glass Ordinary Glazing Quality. Cut Sizes	5 7/8
24 oz. ,, ,, ,, ,, ,, ,,	7 1/16
26 oz. ,, ,, ,, ,, ,, ,,	10
32 oz. ,, ,, ,, ,, ,, ,,	1 1
⅛ in. Rolled Plate	9
1/16 in. and ¼ in. Rough Cast	1 0
⅛ in. Figured Rolled and Cathedral, Standard patterns: White	9
do. Standard Tints	1 4½
do. Special Tints	2 9
⅛ in. Pinstripe, Hammerstripe, Reeded, Reedlyte and Luminating	1 1
¼ in. Wired Cast	1 2
¼ in. Georgian Wired Cast	1 2½

Hollow Glass Blocks—		Each
P.B.2.	5⅛ × 5⅛ × 3⅞ in.	2 9
P.B.3.	7⅞ × 7⅞ × 3⅞ in.	4 2
P.B.32	7⅞ × 7⅞ × 3⅞ in.	4 2
Radiused Corner Blocks to match up with—		
P.B.2		5 3
P.B.3		6 9
P.B.32		6 9

¼ in. Polished Plate Glass, G.G. Quality—		Per ft. super
In plates not exceeding	2 ft. sup.	3 7
,, ,, ,,	5 ft. sup.	4 5
,, ,, ,,	45 ft. sup.	5 1
,, ,, ,,	100 ft. sup.	5 6

¼ in. Polished Plate, extra sizes, *i.e.*, plates exceeding 100 ft. sup. or 160 in. one way or 96 in. both ways. G.G. quality —Not exceeding 135 ft. sup. or 250 in. one way or 135 in. both ways

Not exceeding 180 ft. sup. or ditto	8 4
Not exceeding 200 ft. sup. or ditto	11 3
Plates exceeding 200 ft. sup., prices on application	16 0

Substances other than ¼ in. Polished Plate at Special Prices.
Quantity Tariff—Sheet and Sundry Glass.

The following prices apply to minimum quantities of one size and one pattern delivered by the manufacturer to one site at one time.

Description of Glass	Minimum quantity	Per ft. super s. d.
18 oz. sheet O.Q.	3,000	4½
24 oz. ,, ,,	2,000	6⅛
26 oz. ,, ,,	2,000	7⅝
32 oz. ,, ,,	2,000	10⅛
⅛ in. Rolled Plate	1,000	7½
⅛ in. Figured Rolled and Cathedral Standard Patterns, White	1,000	7½
⅛ in. Pinstripe, Hammerstripe, Reeded, Luminating and Spotlyte	1,000	10½
1/16 in. and ¼ in. Rolled Plate or Rough Cast	2,000	10⅝
¼ in. Wired Cast, Hexagonal	2,000	11⅞
¼ in. Georgian Wired Cast	2,000	1 0⅛

The Builder

CURRENT RATES OF WAGES

AS FROM APRIL 18, 1955. **(Every endeavour is made to ensure accuracy but we cannot be responsible for errors.)**

KEY TO SCHEDULE OF GRADE RATES.

Grade Classification.	A	A1	A2	A3
Craftsmen	4/–	3/11½	3/11	3/10½
Labourers	3/5½	3/5	3/4½	3/4

Town.	*Grade.*
Aberavon	A
Aberdare	A
Abergavenny	A
Abingdon	A2
Accrington	A
Addlestone	A
Aldeburgh	A2
Aldershot District	A2
Alfreton U.D.	A
Alnwick	A1
Altrincham	A
Amble	A1
Amersham	A1
Ammanford	A
Andover	A2
Ardingly	A2
Arundel	A2
Ascot	A2
Ashby-de-la-Zouch U.D.	A
Ashby Woulds U.D.	A
Ashford (Kent)	A2
Ashford (Middlesex)	A
Ashington	A
Ashtead	A
Ashton-under-Lyne	A
Aspatria and Brayton	A2
Atherstone R.D. (parts of)	A
Aylesbury	A2
Ayiesham	A2
Bagshot	A2
Bakewell U.D.	A2
Banbury	A2
Barnard Castle U.D.	A
Barnoldswick U.D.	A
Barnsley C.B.	A
Barrow-in-Furness	A
Barrow-upon-Soar R.D. (exc. Thrussington A2)	A
Barry	A
Basford R.D.(exc. Willough-by-on-the-Wolds A1)	A
Basingstoke	A1
Bath	A
Batley M.B.	A
Baxterley	A1
Beaconsfield & District	A1
Beart	A
Beccles	A2
Bedale R.D.	A
Bedford	A
Bedlington	A
Bedwas	A
Beeston & Stapleford U.D.	A
Belper U.D.	A
Belton	A
Berkhamsted	A
Berrington	A1
Berwick Borough	A
Beverley	A
Bexhill-on-Sea	A2
Biggleswade	A2
Billericay	A
Billing	A
Billingham U.D.	A
Bilsthorpe	A
Birchington	A2
Birkenhead	*
Birmingham C.B.	†A
Bishop Auckland	A
Bishop's Stortford	A
Bispham	A
Blackburn	A
Blackpool	A
Blackwell R.D.	A
Blaydon U.D.	A
Blidworth	A
Blyth	A
Bognor Regis	A2
Boldon U.D.	A
Bolsover U.D.	A
Bolton	A
Bourne End	A1
Bournemouth District	A
Bracknell	A2
Bradford	A
Bradford-on-Avon	A2
Braintree	A1
Breconshire, County of...	‡A2
Brent Knoll	A2
Brentwood	A
Bridlington	A
Brierfield	A
Brighouse	A
Brighton	A
Bristol	A
Broadstairs	A2
Bromsgrove U.D.	A
Broughton, Flint	A
Buckley	A
Bungay	A2
Burnham-on-Crouch	A2
Burnley	A
Burton-on-Trent C.B.	A
Bury	A
Bury St. Edmunds	A1
Buxton	A
Byfleet	A1
Calder Valley	A
Cambridge	A
Cannock U.D.	A
Canterbury	A2
Cardiff	A
Cardiganshire, County of	‡A2
Carlisle	A
Carmarthenshire, Cnty of	‡A2
Caernarvonshire, Cnty. of	‡A2
Carnforth	A
Castleford	A
Caterham	A
Chapel-en-le-Frith	A
Charmy Down	A
Chatham & District	A1
Cheadle (Staffs) R.D.	A
Chelmsford	A
Cheltenham	A
Chepstow	A1
Chertsey	A
Chester	A
Chesterfield M.B.	A
Chesterfield R.D.	A
Chester-le-Street U.D.	A
Chichester	A2
Chippenham (inc. Chippenham Within and Hardenhuish)	A2
Chorley	A
Clacton	A1
Cleethorpes	A
Clevedon	A1
Cleveleys	A
Clitheroe	A
Coalville U.D.	A
Cobham (Surrey)	A
Colchester	A
Colne	A
Colwyn Bay	A1
Congleton	A1
Consett	A
Conway	A1
Cornwall, County of	‡A2
Coventry C.B.	A
Cranbrook	A2
Cranleigh	A2
Crawley (Sussex)	A1
Crewe	A
Cromer	A1
Crook and Willington U.D.	A
Crowborough	A2
Cuckfield	A2
Dalton-in-Furness	A
Darlington District	A
Darwen	A
Deal	A2
Denbigh Town	A2
Derby C.B.	A
Devizes	A2
Devon, County of	‡A2
Dewsbury	A
Didcot	A2
Diss	A2
Doncaster C.B.	A
Dorking	A
Dorset, County of (except-ing Poole, Swanage and Wimborne A1)	A2
Dover	A2
Dovercourt	A
Driffield U.D.	A1
Droitwich M.B.	A
Dudley C.B.	A
Dunstable	A
Durham City	A
Eastbourne	A
E. Glam. & Mon. Val.	A
East Grinstead District	A2
Eastwood (Notts.) U.D.	A
Ebbw Vale & District	A
Edenbridge	A2
Ely	A2
Epping	A
Exeter	A
Fakenham	A2
Falmouth	A2
Fareham	A
Faversham	A2
Felixstowe	A1
Filey U.D.	A
Fleetwood	A
Flint	A
Folkestone	A2
Frinton	A1
Frome	A1
Gainsborough U.D.	A
Gateshead	A
Gillingham (Kent)	A1
Glossop	A
Gloucester	A
Gloucestershire, Cnty. of	‡A2
Godalming	A2
Goole M.B.	A
Gosport	A
Grantham M.B.	A
Gravesend	A
Great Yarmouth	A
Grimsby C.B. & R.D.(part)	A
Grimsby R.D. (remainder)	A2
Guildford District	A2
Halesowen M.B.	A
Halifax	A
Halstead	A2
Haresfield	A1
Harlow	A
Harpenden	A
Harrogate	A
Hartlepool	A
Harwich	A
Haslemere	A2
Hastings	A2
Hatfield (Herts.)	A
Haywards Heath	A2
Hemel Hempstead	A
Henley-on-Thames	A2
Hereford	A2
Herefordshire, Cnty. of...	‡A2
Herne Bay	A2
Hertford	A
Hexham U.D.	A
Heysham	A
High Wycombe	A1
Hinckley U.D.	A
Hitchin	A
Hoddesdon	A
Horley	A2
Horsham	A2
Horwich	A
Huddersfield	A
Hull	A
Hunstanton	A2
Huntingdon (Staffs)	A
Ilkley	A
Ipswich	A
Isle of Sheppey	A2
Isle of Thanet	A2
Isle of Wight	A2
Jarrow M.B.	A
Keighley	A
Kendal	A
Kenilworth U.D.	A
Kettering M.B.	A
Keynsham	A
Kidderminster M.B.	A
King's Lynn	A1
Kingskerswell	A1
Kingsteignton	A1
Kirkham	A
Knaresborough U.D.	A
Lancaster	A
Leamington M.B.	A
Leatherhead	A
Leeds	A
Leicester C.B.	A
Leighton Buzzard	A1
Letchworth	A
Lewes	A2
Lichfield M.B.	A
Lincoln C.B.	A
Littlehampton	A2
Liverpool	*
Llandudno	A1
Llanelly	A
London	*
Long Eaton	A
Loughborough M.B.	A
Louth M.B.	A1
Lowestoft	A
Loxton	A2
Luton	A
Lyneham (Devon)	A2
Macclesfield	A
Maidenhead	A1
Maidstone	A1
Maltby	A
Maldon (Essex)	A1
Malvern U.D.	A1
Manchester	A
Manningtree	A1
Mansfield M.B.	A
March	A2
Margate	A2
Market Harborough U.D.	A
Maryport	A
Matlock U.D.	A
Melksham	A2
Melton Mowbray U.D.	A1
Merthyr	A
Middlesbrough	A
Middleton	A
Middlewich	A
Milford Haven	A1
Morecambe	A
Morley	A
Mundesley	A2
Nantwich	A
Nelson	A
Newark-on-Trent R.D.	A1
Newbury	A2
Newcastle-on-Tyne	A
Newcastle-under-Lyme	A
New Forest District	A1
Newmarket	A1
Newport, Mon.	A
Newport Pagnell	A2
Newton Abbot	A1
Northallerton Dist.	A
Northampton C.B.	A
North Shields	A
Norton Radstock	A1
Norwich	A
Nottingham C.B.	A
Nuneaton M.B.	A
Oakham U.D.	A2
Oldham	A
Ongar	A
Ormskirk	A
Ossett and Horbury	A
Oxford	A
Oxted	A1
Paignton	A1
Peterborough	A
" Soke	A1
Pickering	A3
Plymouth	A
Pontefract	A
Pontypridd District	A
Portishead	A
Portland Stoneyards	A
Portsmouth	A
Port Talbot	A
Preston	A
Pudsey	A
Pulborough	A2
Radnorshire, County of	‡A2
Ramsgate	A2
Rayleigh	A
Reading	A
Redcar B.	A
Redditch U.D.	A
Redhill and Reigate	A
Ripon	A3
Rochdale	A
Rochester	A1
Rotherham	A
Rugby M.B.	A
Saffron Walden	A2
St. Albans	A
St. Helens	A
St. Neots	A2
Salisbury City	A2
Salisbury Plain	A2
Sawbridgeworth	A
Saxmundham	A2
Scarborough	A
Scunthorpe	A
Selby	A
Sevenoaks	A1
Sheerness	A2
Sheffield	A
Shipley	A
Shoeburyness	A
Shoreham	A
Shrewsbury M.B.	A
Sittingbourne	A2
Skegness U.D.	A1
Skipton U.D.	A
Sleaford U.D.	A2
Slough	A
Smethwick C.B.	†A
Snettisham	A2
Somerset, County of	‡A2
Southampton	A
Southend-on-Sea Dist.	A
Southport	A
South Shields C.B.	A
Spalding U.D.	A2
Stafford M.B.	A
Staines	A
Stamford M.B.	A1
Stantonwick	A
Stevenage	A
Stockport	A
Stockton R.D.	A
Stockton-on-Tees	A
Stoke-on-Trent C.B.	A
Stoke Orchard	A1
Stourbridge M.B.	A
Stourport U.D.	A
Stowmarket	A1
Stratford-on-Avon M.B.	A
Sunderland District	A
Sunningdale	A1
Sutton Coldfield M.B.	A
Swaffham	A2
Swanage	A1
Swansea	A
Swindon	A
Swinton U.D.	A
Tamworth M.B.	A
Tenterden	A2
Tewkesbury	A1
Thames Haven	A
Thetford	A2
Thorpe Bay	A
Thurrock U.D.C. Area	A
" North of, to Billericay	A
Tilbury	A
Todmorden	A
Tonbridge	A1
Torquay	A1
Totnes	A1
Trowbridge	A2
Tunbridge Wells	A1
Tynemouth C.B.	A
Uppingham (Salop)	A1
Uttoxeter U.D.	A2
Wakefield	A
Wallsend B.	A
Walsall C.B.	A
Walsden	A
Walton-on-Naze	A1
Ware	A
Warminster	A2
Warrington	A
Warwick M.B.	A
Wellington U.D.	A
Wells (Norfolk)	A2
Welwyn	A
Welwyn Gar. City	A
West Bromwich C.B.	A
Westbury	A2
Westcliff-on-Sea	A
Westerham	A1
Weston-super-Mare	A1
Weybridge	A
Weymouth	A1
Whitby U.D.	A1
Whitstable and District	A2
Wickford	A
Widnes	A
Wigan	A
Wigton	A2
Wilmslow	A
Wilts. County of	‡A2
Winchester	A1
Windermere	A2
Windsor and Eton	A
Wisbech	A2
Witham	A1
Woking (District)	A1
Wokingham	A2
Wolverhampton C.B.	A
Woodbridge	A2
Worcester C.B.	A
Workington	A
Worksop M.B.	A
Worthing	A2
Wrexham (incl. Cefn)	A
Wroughton	A1
Wylam	A
Wymondham	A2
York	A

For Birkenhead, Liverpool and London the rates are:—Craftsmen, 4s. 1½d.; Labourers, 3s. 7d. In the case of London the rate beyond the 12-mile radius is:—Craftsmen, 4s. 1d.; Labourers, 3s. 6½d. †Plus 2d. per working day. ‡ This is the County rate and applies except where higher grades are stated.

NOTE.—Carpenters and Joiners providing own tools when employed in establishments operating under the Supplementary Rules for Woodworking Factories and Shops, receive 2d. per day; when employed on other building industry work, 4d. per day.

WOMEN'S RATES.—In all districts throughout the country the rate of wages for women engaged in craft processes is 3s. 1½d. per hour. Women engaged on work other than craft processes, 2s. 9½d. per hour.

For Building Trade Wages in Scotland see page 979.

ROAD SYSTEMS IN BRITAIN AND USA

Contrasting Attitudes

COMPARISONS between the British and American attitude to the problems of road systems and road transportation in both countries, were made by MR. WILFRID ANDREWS, chairman of the Roads Campaign Council at a Press conference in London on June 1.

Mr. Andrews, who recently returned from the US where he studied the way in which they are improving their road system, said that last year they spent £1,332 million on new roads and major improvements—or 56 per cent. of their road taxation. They had created a national system of inter-state highways which joined 42 state capitals and 90 per cent. of all towns over 50,000 population.

What had we done? In 1946 we announced a grand plan to build 800 miles of brand new roads and to modernise extensively 1,700 miles of existing trunk roads. The plan was shelved in 1947. Last year, we spent £7 million on new roads and major improvements—or less than two per cent. of our road taxation.

The Americans, Mr. Andrews continued, gave top priority to transport. Last September President Eisenhower called for a plan to solve all the nation's road problems. In January this year (less than five months later) it was delivered, and, if adopted by the Senate, would cost £36,000 million. The Americans did not say: "We cannot afford it." They said: "How can it be raised."

The railway strike had given us a truly frightening picture of what road conditions would be like in the very near future. In London, this was especially so. The chaotic mess around London would be an everyday feature of our life in a very few years—possibly by 1960. Before the war London's traffic jams cost us £70 million a year. Who knew what it was costing now and how much more it would cost before anything was done?

In conclusion, Mr. Andrews said that the sole aim of the Roads Campaign Council was to get better roads for Britain. He was more than ever convinced that public opinion must demand Government action before it was too late and the wheels came to a halt.

ACQUISITION OF LAND BY LOCAL AUTHORITIES

Provisions of New Planning Act

THE Ministry of Housing and Local Government have issued a circular (No. 34/55), together with a memorandum, to local authorities, joint boards and statutory water companies, drawing attention to the provisions of the Town and Country Planning Act, 1954, which came into operation on January 1 last.

The purpose of the memorandum, states the circular, is to explain the provisions of that Act and the regulations made under it as they affect the land transactions of local authorities and statutory undertakers, and in particular the acquisition of land where compulsory powers are used or are available. In most cases the compensation or price payable will depend on the amount of the unexpended balance of established development value attaching to the land, and the memorandum therefore deals in some detail with the procedure for ascertaining the amount of this balance.

Transactions between one public authority and another and appropriations are dealt with in paragraphs 40 to 47. These are in the main a restatement of paragraphs 10 to 13 of Circular 41/53, with the amendments necessary to take account of the changes made by the Act in the basis of compensation on compulsory acquisition. The circumstances in which an authority may be entitled to a payment under the Act are summarised in paragraphs 3 to 5.

Finally, the circular draws attention to paragraphs 33 to 37 of the memorandum, which offers some guidance to authorities on the administration of Section 33 of the Act. It is hoped that this will, to quote the words used by the Lord Chancellor in the House of Lords, "ensure both uniformity in the administration of the Clause and a reasonably clear standard by which all concerned can judge how they should act."

FIDOR CONFERENCE

Chairman's Review of Year's Activities

THE ANNUAL CONFERENCE of the Fibre Building Board Development Organisation, Ltd., was held on June 7 and 8 at Oslo, Norway. A general review of FIDOR activities during the past year was given by MR. C. GEOFFREY CULLEN, chairman of the Governing Council. Extracts from MR. Cullen's speech are given below:—

The year just gone by has seen very considerably greater activity, and on a still more versatile note than was possible during our first year, and I think everyone concerned with FIDOR can congratulate themselves that a good idea has proved to be good in practice.

I cannot possibly let this occasion pass without drawing your particular attention to the thanks we need to give to the members of the technical committee, under the able chairmanship of Mr. Eric Lawrence. It is upon the technical committee that the real burden of the day falls. This brings me to a point which I cannot emphasise too strongly, and one which I hope will be fully understood and still more fully appreciated by all subscribers, that is, that FIDOR is dependent to a major degree upon voluntary workers. We have a fully employed technical officer, of course, but even he must depend upon the goodwill and the time of these voluntary people to advise him upon the up-to-date news of the wallboard industry, and to give him the benefit of our experience.

There are, as you know, and as some of us know only too well, many who are content to sit on the sidelines, and judging by their criticisms are better able to take part in the game than those already giving their time and energy to it, and I would ask these experts to offer some real help.

During this year we have had the benefit of the addition to our governing council of representatives of BID and WIDMA, representing as they do, between them, the great majority of the distributing trade in the United Kingdom.

PLASTICS EXHIBITION

Exhibits and Trends

THE British Plastics Exhibition which is now running at Olympia, is not only bigger than ever and the most comprehensive plastics exhibition in the world, but represents the British plastics industry at its highest-ever production output.

The value and volume of production was, in 1954, a record for both the export and home trades. The great expansion during the last 10 years has arisen from increased demand and more capital investment.

This year Canada is specially represented by a large Canadian Government stand, which shows what various Canadian companies are doing for laminated plastics surfacing for industry, restaurants, railway coaches and stores.

Thermoplastics are very much in evidence. One firm shows transparent, acrylic sheet in use in advertising displays, in street lighting lanterns and large counter canopies for canteen hygiene and for multiple store displays. The canopies are lightweight and resistant to breakage and chipping.

A fire hydrant plate in two-colour laminated material eliminates the maintenance costs to municipal authorities of metal plates in corrosive seaside atmospheres. British Railways are using translucent lamp fittings, with lettering inlaid, in their new efficiency campaign.

The chemically exciting region of polyester resins produces new materials at an embarrassing rate. Five polyester resins are named by one firm for reinforcement with glass or other fibres in structural and decorative sheeting, machine housings, tanks, trays, furniture, boat hulls and automobile parts. Indeed, this field of plastics, which was seemingly in its infancy at the 1953 exhibition, now appears to be growing rapidly.

Polythene tubing has deftly-designed polythene fittings and plumber units. It may also be metal-covered, as are copper-clad plastics laminates now available for the electrical industry. Frost-proof pipes are another advance made possible by polythene.

Plastics tubular structural components are also being used increasingly in building.

BOILER SETTERS' AGM

New Officers Appointed

THE annual general meeting of the Association of Boiler Setters, Chimney and Furnace Constructors was held at Eastbourne on May 20. The following officers were appointed for the ensuing year: president, Brig. R. R. B. Hilton (Messrs. R. B. Hilton, Ltd.); honorary treasurer, Mr. T. Topping (Messrs. Topping and Leggat); honorary auditors, Mr. A. M. Topping and Mr. T. H. Sewell (Messrs. Boiler Setters and Erections, Ltd.).

The executive committee appointed is made up as follows: Brig. R. R. B. Hilton, Mr. P. A. Evans (Messrs. W. Neil and Co., Ltd.), Mr. J. Woods (Messrs. Poulton and Son, Ltd.), Mr. H. Walker (Messrs. Wm. Hamer and Sons, Ltd.), Mr. W. Thornley (Messrs. Adament Boiler Settings, Ltd.), and Mr. E. Needham (The Steeplejack and Engineering Co., Ltd.).

NEWS IN BRIEF

THE MODULAR CATALOGUE

The Modular Society has prepared a third batch of modular sheets for its members. Details of the conditions under which the catalogue may be obtained are available from the Secretary at 22, Buckingham-street, WC2.

BUILDING EXHIBITION

A building exhibition arranged by the South Devon Technical College is to be held at the College from June 17 to 23. Among exhibits to be shown will be those dealing with teamwork in building, building research and housing, and careers in building.

BERWICK TOWN HALL

The Georgian Town Hall in the main street of Berwick, which has been described by Professor A. E. Richardson, president of the Royal Academy, as "the finest building between Newcastle and Edinburgh worthy of preservation" is to be completely restored at a cost of £25,000.

ARCHITECTS' CAR CLUB

A club, sponsored by the IAAS, for architects and surveyors interested in motor-cars, has been formed and is to be known as "The Architects' and Surveyors' Car Club." Those interested should communicate with Mr. Barrie Meekins, ARICS, 20, Balcombe-street, Dorset-square, St. Marylebone, NW1.

TECHNICAL COLLEGE PROSPECTUS

The current prospectus of the City of Portsmouth College of Technology, Park-road, Portsmouth, Hants, has recently been issued. The college's building department is organised to provide courses for all members of the building industry, from the junior apprentice to the senior executive. A special course for sanitary inspectors is also provided. Copies of the prospectus may be obtained from the Principal.

MEMORIAL WINDOW

A memorial stained-glass window to the officers and airmen of Nos. 2, 3, 8 and 100 Groups, Royal Air Force Bomber Command, who lost their lives during the war will be unveiled in Ely Cathedral on Remembrance Day, November 6, by the Senior Staff Officer, Bomber Command. The window has been designed by Mr. E. Liddall Armitage, chief designer at the Whitefriars stained-glass studios of James Powell and Sons, Ltd., Wealdstone, Middlesex.

BUILDING FOR LEISURE

Now was the time to go ahead with plans for big community centres in Birmingham, members of the Birmingham Council for Community Associations were advised by Sir Herbert Manzoni, Birmingham City Engineer and Surveyor, at their annual meeting in the Council House on May 18. Sir Herbert said that one of the greatest problems in the future would be the right use of leisure. Automatic factories would provide greater leisure in larger amounts than at present, and a community association should then be the most important thing in the lives of the people.

This was the Council's opportunity to lay the foundations for the type of centre that would be needed, Sir Herbert declared. Somebody had to press hard for adequate facilities. There were sites for community centres on the majority of estates in Birmingham.

RECORD CEMENT PRODUCTION

Sir George Earle, chairman of the Associated Portland Cement Manufacturers, Ltd., and the British Portland Cement Manufacturers, Ltd., in his statement in the annual reports of the two companies, says that although in 1954 their production of cement was a record, they hope to get even better figures of production this year. The building of the new works at Cauldon, Staffs, is now well in hand and progress should be satisfactory. The cost of the works will be about £3m. and the annual output 175,000 tons.

IDENTICAL CEMENT TENDERS

WHEN Bristol Housing Committee were told on Monday that 14 tenders received for cement all quoted the same figure, ALDERMAN W. H. HENNESSY commented: "There must be a ring or trust and we are being held to ransom." MR. L. K. ROBINSON, of the town clerk's department, said that the tenders were from different firms but were all written on similar notepaper. "The central purchasing department of the corporation has referred the matter to the Association of Municipal Corporations so that they can take it up with the Board of Trade and the Monopolies Commission," he added.

PERSONAL COLUMN

Following the election of MR. G. F. INGHAM CLARK to the board of Pinchin Johnson & Associates, Ltd., as sales director, the management of the associated companies, Robt. Ingham Clark & Co. and R. Gay & Co., is, as from June, the joint responsibility of the general managers, MR. G. S. RICHARDS and MR. D. J. S. SHAW.

MR. DAVID I. KING, editor of "The British Steelmaker" and of "The Master Builder," has joined the United Steel Companies, Ltd., as technical press officer. He is responsible to MR. CHARLES HERVEY, United Steel's public relations officer.

The Limmer & Trinidad Lake Asphalt Co., Ltd., announce with great regret that because of ill-health MR. T. G. MARRIOTT has resigned from the board. He had been a managing director of the company for 38 years and was previously a director of the Trinidad Lake Asphalt Paving Company.

The "Thermovent" heating division of E. K. Cole, Ltd., 5, Vigo-street, W1, have announced the appointment of MR. E. J. BOLAN as technical sales representative covering the South-East and South-West areas of London.

THE ORGANISATION OF BUILDING FIRMS

A series of articles, contributed by leading Builders in various parts of Great Britain, on the organisation of the medium-sized builders' business. Reprinted from "The Builder."

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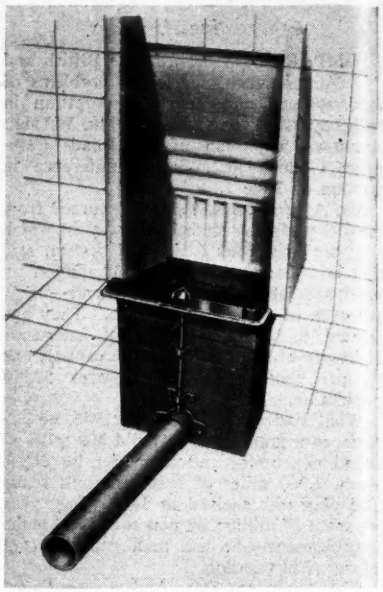
TRADE NEWS



THE "SAF-FIRE" FIRE GRATE manufactured by Princes Foundry Co., Ltd., Tipton, Staffs, has been designed for all-night burning with a floor-level grate and controlled under-floor air-flow. Its features include a cast-iron under-floor air-flow pipe, and air-flow control to provide adjustment of the rate of burning; fluted firebricks to radiate maximum heat into room; and a large capacity ash box. A removable hearth plate is fitted for easy cleaning, and a standard block type boiler can be employed where required. The "Saf-fire" is understood to give complete combustion and to burn any type of fuel or refuse. It is claimed that 8 lbs. of mixed coal and slack will last 24 hours.

STEEL WOOL

The Steel Wool Factory (London), Ltd., Silverdale-road, Hayes, Middlesex, announce that they are now producing steel wool (Reg. Trade Mark "Steewo") in eleven grades—from very fine to coarse.

COMPANY REPORT

An earned profit before taxation of £94,517 for the year ended November 30, 1954, has been declared by Humphreys, Ltd., 187, Knightsbridge, SW7, according to the directors' report presented at the company's annual general meeting held in London on June 2.

COMPANY'S EXPANSION

An additional factory in Acton-lane of 4,000 sq. ft. in area has been purchased by Beckett, Laycock and Watkinson, Ltd., Acton-lane, NW10, and will be brought into use shortly. Still further plans for future development are being formulated by the company.

CONCRETE FLOOR PAINT

A coloured rubber paint developed to protect and decorate new and old concrete floors has been introduced by Allweather Paints, Ltd., 36, Great Queen-street, WC2. It is claimed to eliminate dust, be alkali-resistant and to resist hard wear. Known

as "Pitan" concrete floor paint, this coating is available in a wide colour range.

TOWING WINCH

Details of a 76,000 lb. pull towing winch matched up to the 286 hp Caterpillar D9 tractor (details of which were given in *The Builder* of May 13) have recently been issued by the Hyster Co., USA. Information regarding the Hyster D9A towing winch may be obtained from Fred Myers Tractor and Equipment Co., 4, Tilney-street, W1.

DIESEL EQUIPMENT CONTRACT

The first marinised automatic main standby diesel generating equipments to be built by Auto Diesels, Ltd., of Uxbridge, Middlesex, have been supplied on order to the Blue Star Line, Ltd. They are for installation in four vessels of the line, the Uruguay Star, Argentina Star, Paraguay Star and Brazil Star.

BONDING FLUID

A bonding fluid for the plastering trade, called "Plastaweld," is being produced by J. Manger and Son, Ltd., 57d Kingsland High-street, E8. It is claimed that when applied direct to the surface being plastered, "Plastaweld" creates a permanent bond without the need for hacking; that backing coats can be applied to pointed brickwork without hacking or raking; and that neat face coats can be permanently applied to all surfaces.

PLASTIC FLOOR FINISH

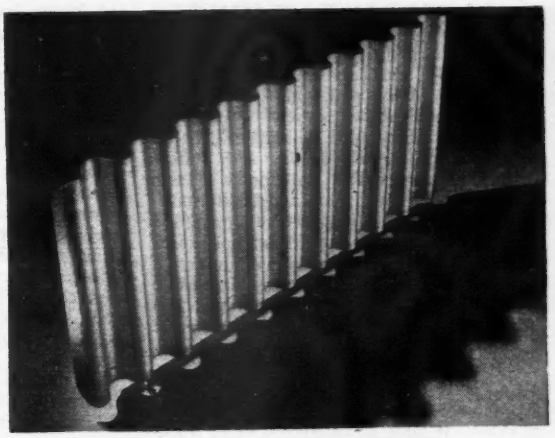
An abrasion-resistant floor coating has been developed from cold-setting plastics by British Bitumen Emulsions, Ltd., Dundee-road, Trading Estate, Slough, Bucks., which after the addition of a hardener will convert to a workable consistency at normal room temperatures. It comprises a quick-drying transparent film for wood floors, certain decorative coverings and concrete, and is claimed to provide a heat-resisting, oil, grease and petrol-proof coating, the floor being ready for service within 24 hours of the final coat.

COLD-TEMPERATURE PAINT

The "Pitan" cold-temperature resistant paint recently developed by Allweather Paints, Ltd., 36, Great Queen-street, WC2, is claimed to be able to withstand low temperatures and yet remain flexible. It incorporates a special plasticiser and provides a surface understood to withstand acid and alkali attack and the destructive effects of brine and ammonia. Another new product is a chlorinated rubber-based mould-resistant paint, the main constituent of which is mercury, which is permanent and insoluble in water and will remain effective for the service life of the paint.

THE WESTBURY HOTEL

Each of the five air-conditioning plants installed by Matthew Hall and Co., Ltd., in the recently opened Westbury Hotel, New Bond-street, W1, is provided with fully automatic electronic modulating controls manufactured by Honeywell-Brown, Ltd., 1, Wadsworth-road, Perivale, Greenford, Middlesex. Precise thermostatic control of dry bulb temperature is provided, and a relative humidity at the required level is maintained by humidistats located in the return air duct. The fresh air intake for all plants is preheated; and a constant temperature of chilled water supplied to the cooler batteries is also maintained.



Constructed of lightweight metal alloy, this new-design electric radiator is being marketed by Yelsen, Ltd., of Sidcup, Kent. The heating elements are fully insulated and all current-carrying parts inaccessible. No oil or other heat-transferring liquids are used. Owing to its low loading density, it is claimed that this radiator does not produce that "drowsy" feeling which is often experienced with some other types of electric heaters. It is portable and is also suitable for inclusion in a permanent decorative scheme. Fitted with thermostatic control, it is available in different loadings and sizes.

NEW TELEVISION SHOWROOM

Following the recent opening of a demonstration kitchen in their showroom at Queen's House, Kingsway, WC2, the English Electric Co., Ltd., have now completed a new television viewing room adjoining the main showroom. This room has been designed by Mr. Albert Smith, using contemporary materials, style and colour schemes. The predominant colour in the room is the deep wine red of the carpet, and the walls and ceiling are treated as separate sections in dove grey, pale pink and eggshell paint. A display panel finished in a black matt paint runs round the room at eye-level, and carries reproductions of Old Masters. Between the pictures are three smaller display panels, mounted with a collection of nineteenth century Rockingham and Staffordshire figurines; and a carved Flemish figure with an example of Portuguese West African hand-carving in the form of a wooden zebra. The two light fittings have been specially designed to illuminate the room without throwing any reflection on the face of the television receivers being displayed. The arms of the fittings are cellulosed in grey, and the six shares are in spun metal of brilliant primary and secondary colours. The television chairs provided for viewers, by Hille, of London, have slatted frames and are cushioned in muscat green Replin.

ROYAL TOURNAMENT

The versatility of steel scaffolding is demonstrated at the Royal Tournament at Earls Court, where not only has it been used for the horse-lines and kennels behind the scenes, but forms the framework of the 60 ft. "cliff" which dominates the arena. This cliff is scaled daily by 60 Royal Marine Commandos who assault an enemy radar station at its summit. They are commanded by Captain M. E. B. Banks, RM, who was a member of the Greenland expedition. It took nine men of the Steel Scaffolding Co., Ltd., only seven days to erect the 14,000 ft. of tube which support this formidable cliff. It is 100 ft. wide with an opening in the middle 42 ft. by 18 ft. through which all the participants, human and animal, enter the arena. The scaffolding framework supports a perpendicular wall built up of concrete slabs, each weighing 5 cwt. and contoured on the visible side to form the face of the realistic cliff.

PRECAST LOADBEARING PANELS

A precast panel unit consisting of a sheet of corrugated asbestos cement faced on both sides with a skin of hardened plaster is being marketed by Petradene, Ltd., 23 Bendon Valley, Garratt-lane, SW18. Known as the "Superpanel," it can be made in storey-height units either as a non-loadbearing or loadbearing wall, carrying loads of up to four tons per foot run. It is understood that this precast unit can be made and erected on site, with plant and equipment costing less than £500. Electric cables or pipes can be run in its hollow vertical core, and switch-boxes, blocks and screws can be cast into the panel. The finished panels can be easily sawn or drilled, even after hardening has taken place, and can be erected by two men with a variety of top and bottom fixing details. If required, the panels can be left with joints unfilled and merely covered with a scrim or paper tape prior to the application of paint or wallpaper finish. It is claimed that erection figures, including casting, of one panel per man hour can be easily achieved, and that casting can be carried out on site in the worst weather conditions, such as frost.

For universal waterproofing
Ideal for proofing gutters, walls, roofs of stone, slate, wood, tile, lead, iron, zinc, felt, or concrete.
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OVERSEAS BUILDING

[*From Our Own Correspondents*]

INDIA.—A national museum is to be erected in New Delhi, India. Construction will be in four phases. Planned to be of three storeys, the building will house a number of sections dealing with India's cultural history. The building will also have a large library room and auditorium.

A submersible bridge is to be built over the River Chambal near Agra on the national highway connecting Bombay with Agra. It will be 2,435 ft. long, with foundations to a depth of 60 ft. below water level and with spans up to 143 ft. each. . . . A 3,300-ft.-long concrete road bridge with 150-ft. spans and foundations 75 ft. below water level is to be constructed over the River Sone in the Mirzapur district of Uttar Pradesh. It must be completed in 15 working months to serve the Rihand Dam project. Designed according to Freyssinet patents, it will be one of the longest prestressed road bridges in Europe or Asia.

A state-owned DDT factory is to be set up near Alwaye in Travancore-Cochin. The new factory will have a capacity of about 1,400 tons of DDT per year. Other DDT factories are to be expanded.

A blueprint involving an expenditure of approximately Rs.300m. for the all-round development of Rajasthan has been drawn up for inclusion in the state's second five-year plan. Emphasis is placed on irrigation projects and it is proposed to spend Rs.800m. on various projects, including the unfinished part of the Bhakra and Chambal schemes. Rs.30m. are to be spent towards industrialisation of the state and about Rs.150m. each for the development of communications and medical health services.

KENYA.—A sugar refinery is to be built at Mombasa early in 1957. A public company with an authorised share capital of £300,000 is being formed to promote the scheme. It is estimated that the factory will cost £¼m. to build, and a ten-acre site has been applied for in a new industrial area in Mombasa.

The construction of a £1¼m. factory for the manufacture of kraft paper is projected. The Cellulose Pulp Committee is dealing with this matter. A number of foreign concerns are also said to be interested.

Plans are being made to rebuild "Treetops Hotel," the famous game-watching post in the Aberdare National Park forest which was burned down last year. . . . A £23,688,350 development plan has been announced covering a period of three and a half years. Building allocations under this plan are as follows: Construction of police buildings, £4,090,190; medical services and African housing, £4,378,734; schools, £3,705,000; construction work at Embakasi Airport, £1¼m.; road-building to be undertaken by the Ministry of Works, £2,900,000; staff housing, £1,006,000; other projects will be announced at a later date.

The East Africa High Commission has announced that it intends to call for tenders during August for the construction of a new headquarters building of five floors in Nairobi, totalling approximately 187,000 sq. ft. Estimated cost is £450,000..

NORWAY.—The Norwegian Institute for Atomic Energy has submitted proposals to the Government for building an atomic reactor with a capacity of between 10,000 and 20,000 kw. The reactor will be built at Halden near the pulp and paper mills of the large Saugbrugsforeningen Co. and will be used to produce some of the steam needed by this company for its production processes. The Institute estimates that the work will involve expenditure around £1¼m.

RHODESIA.—The Rhodesia Railways are soon to start work on a £122,000 remodelling scheme at Kafue. It can be divided into three parts: The extension of the existing yards; the building of a new locomotive depot; and the construction of modern overhead coaling bunkers. Provision is to be made later for the establishment of a carriage and wagon depot and a new goods area.

Six thousand houses are to be built in Southern Rhodesia at a cost of nearly £2m. The scheme is to be divided between the main cities of Bulawayo and Salisbury. This is a Government-sponsored venture and details will be available from the Housing Department in Salisbury.

The suggested capital expenditure for the hydro-electric project to be established on the Shire River in Nyasaland is now said to be in the £77m. region. Three years' research has been completed by Sir William Halcrow and Partners. It has been recommended that a barrage should be built on the river in order to stabilise the level of the lake, provide hydro-electric power for the eastern portion of the Federation and make possible the irrigation of large areas of the lower Shire River Valley. The scheme will be carried out in stages. The first stage will cost about £23,631,000.

THE
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Many industrial concerns are interested in building factories in this region which will be most suitable for paper manufacturing from reeds, jute processing, sugar industries and production of cement.

UGANDA.—A five-storey building is to be constructed in Kampala, Uganda, to house the head office of the Uganda Electricity Board, the Lint Marketing Board, the Uganda Development Corporation and the Coffee Industry Board. It will be the largest building ever to be erected in the town and its design was selected some time ago from a competition, won by Mr. E. I. Graaf, ARIBA, of Johannesburg, to which 600 architects submitted designs.

NATIVE HOUSING, RHODESIA

* The following is the text of a notice concerning Southern Rhodesia Government Tender No. 2115:—

"Tender for African Housing required by the Southern Rhodesia Government, Minister of Housing: Tenders are invited for the construction of 238 two-roomed and 1,978 four-roomed houses, together with lavatory and cooking shelter blocks, in the South-West portion of Highfield Native Village Settlement, Salisbury. Tender documents can be obtained on and after May 16, from the Office of the Chief Engineer, Native Engineering Department, 104A, Jameson-avenue, PO Box 8113, Causeway, Salisbury, S. Rhodesia, on receipt of a cheque or bankers draft for the sum of ten guineas made payable to the Southern Rhodesia Government, which will be refunded on return of the tender documents.

Tenders shall be enclosed in sealed envelopes, endorsed "Tender 2115, African Housing," and submitted so as to reach the Secretary, Federal Tender Board, PO Box 8075, Causeway, Southern Rhodesia, by 2.15 p.m. on July 8, 1955, as stated in the tender documents." The tender documents are not available in the Export Services Branch. Telephone inquiries to Chancery 4411, ext. 738 or 771, quoting ref.: ESB/11309/55.

NATO TENDERS

An additional number of projects are to be undertaken for NATO in France and Turkey. In France there are four projects shortly to go out to tender. The largest one, for £800,000, is for the laying of 140 kms. of 8-in. pipeline between Cambrai and Dunkirk. Another one worth £215,000 is for the construction of an electric power house and ground lighting at an airfield. Full details are available from the Ministère de la Defense Nationale et des Forces Armées, Service Infrastructure Air, 26, Boulevard Victor, Paris.

Another project concerns the construction of internal roads at an airfield the approximate value of which is estimated at £130,000. The fourth contract is worth about £20,000 and is for the construction of a water reservoir. Details about these are available from the aforementioned address.

In Turkey a large maritime airfield is to be constructed at an estimated cost of £3,400,000. It is specified that the work must be completed by the end of 1957. Full details in this instance are available from Nafia Vekaleti, Hava Maydanlari Insaat Müdürlügü, Kavaklidere, Ankara.

* From the Board of Trade Special Register Information Service.

The SCOTTISH BUILDER

Scottish Architecture Criticised

LORD STRATHCLYDE, Minister of State for Scotland, speaking at the annual dinner of the Royal Incorporation of Architects in Scotland at Aberdeen on June 3, said that very few people, in his experience, came to Scotland to see good examples of new houses or modern architecture.

He continued: "It seems to me that the fault lies in the fact that we in Scotland do not employ our architects sufficiently often nor give them enough freedom when we do. Look at the private houses being built to-day and you will find few signs of modern and imaginative architectural design, although it costs no more to build houses to a design that combines character and a pleasing external appearance with improved standards of comfort and convenience.

"I have no doubt that a good architect properly employed will always save money. But, nevertheless, I would not disguise from you my own view that architects could develop a still greater cost consciousness and a willingness to apply their skill to the design of the less-expensive houses. They should design with a cost in mind and know enough about costs to do this. We need cost-conscious architects and design-conscious administrators."

Lord Strathclyde stated that there had been two or three experiments of collaboration between private house builders and architects—at least one in Edinburgh and others in the London area—which had produced the most promising results. These houses had been rapidly snapped up which seemed to show that a market for good design existed.

"Many local authority houses are first class; but the weakness has been in layout and amenity. I would like to see our larger local authorities employ consultant architects more frequently and not rely entirely on the designs of their own officers. It is not right to cover a whole area with nothing but one man's designs for, perhaps, ten or 20 years."

At the annual general meeting of the Incorporation, which took place at Aberdeen on June 3, Mr. William McCrea, FRIBA, was elected president for the ensuing year in succession to Mr. Leslie G. MacDougall, RSA, FRIBA.

Aberdeen Architectural School

GARTHDEE HOUSE, ABERDEEN, which was recently handed over to the governors of Robert Gordon's College for use as a school of architects and business men, will be known as the Scott Sutherland School of Architects. Councillor Sutherland recently conducted over it a party, which included Mr. L. G. MacDougall, RSA, FRIBA, retiring president of the Royal Incorporation of Architects in Scotland.

Plans for alterations and for the erection of a two-storey wing have been approved by the Scottish Education Department. Work is expected to begin in about two months, and it is hoped to have the new school of architecture completed before the end of next year.

German Architecture Exhibition

THE EFFORT made by the people of Western Germany to rebuild their war-damaged towns and villages is reflected in an exhibition which opened on June 1 at the Scottish Building Centre, 425, Sauchiehall-street, Glasgow. The exhibition will continue until June 18.

East Kilbride's 3,000th House

THE 3,000th house in East Kilbride will be opened on June 11 by Sir Garnet Wilson, chairman of Glenrothes Development Corporation. Houses in progress of construction number 1,443 and 1,053 men are employed on the contracts.

Fife Multi-storey Flats

KIRKCALDY'S first block of multi-storey flats, erected at the western end of Valleygardens in the Temple Hall housing scheme, was opened on June 3 by MR. NIXON BROWNE, Joint Under Secretary of State for Scotland. The block, which is eight storeys high, contains 48 separate flats—24 of three apartments and 24 of two apartments.

The flats are the first non-traditional multi-storey ones to be built in Scotland. They are also the first flats to contain underfloor electric heating. This is provided in the living-room and hall of each flat. It is claimed to be the most modern and effective method of building heating. The solid concrete floor acts as a heat reservoir. Enough heat can be absorbed during the night to last throughout the following day, and this enables the electrical intake to be restricted to times outside the Electricity Board's peak load period.

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SCOTTISH BUILDING TRADE WAGES

FOLLOWING are rates of wages authorised by the Scottish National Joint Council as from April 18, 1955. They apply to the whole of Scotland, including the islands of Orkney, Shetland, etc.

Grade A: Craftsmen, 4s.; Labourers, 3s. 5¼d.

For apprentices, the rates are:

Year.	*Percentage of Craftsman's rate.*	*For week of 44 hours.*
		s. d.
1st	25	44 0
2nd	33⅓	58 8
3rd	50	88 0
4th	66⅔	117 4
5th	75	132 0

For female labour, the rates are:

	s.	d.
Operatives on craft operations (at end of probationary period)	3	5½
Operatives on labouring operations (at end of probationary period)	3	2

NEW BUILDINGS

Ayrshire.—Plans are in the hands of the architects of the South West Electricity Board for a new electricity station at Langlanes-st., Kilmarnock (estimated cost £199,999).

Calderbank.—Lanarkshire CC has plans in hand for 48 houses at Main-st. housing site. Architect, Samuel MacColl (A), County-bldgs., Beckford-st., Hamilton West.

Glasgow.—Plans have been prepared for A. F. Reid & Sons, Ltd., bakers and confectioners, Victoria-rd., for alterations and additions at the Maraibourgh House restaurant buildings, Langside-ave., Crossmyloof. Architects, Messrs. Whyte and Nicol (F&A), 31, North Frederick-st., George-sq., Glasgow.

Glasgow.—Plans have been approved for the Horne Engineering Co., Ltd., for extensions, alterations and additions. Architects, Frank Boston, Burnet & Bell, 180, Hope-st., Glasgow.

Glasgow.—Plans have been approved for Douglas T. Gobbie, Ltd., Tantallan-rd., for additions and alterations at Govan-rd. and Elder-st., Shieldhall. Architect, Alexander Wright (F), 110, Blythswood-st., Glasgow.

Glasgow.—Plans have been prepared for Bilsland Bros., Ltd., wholesale bread and biscuit manufacturers, Hydepark Bakery, Anderston, for additions and alterations at Hydepark-st. Architects, Messrs. Wylie Shanks & Wylie (F&A), 12, Claremont-gdns., Sauchiehall-st., Charing Cross, Glasgow.

Glasgow.—Plans are in hand for scheme of demolition works and the erection of a Masonic temple at Nitsdale-rd., Strathbungo. Architect, J. Macgilliard, 15, Glentyre-dr., Glasgow.

Glasgow.—Plans have been approved for Shawlands Cross Parish Church of Scotland for additions and alterations, etc., at Pollokshaws-rd. and Moss-side-ave. Architect, William R. Mackay (F), 20, Bath-st., Glasgow.

Glasgow.—Plans are to be prepared for a primary school at Guilford-st. Architect, John Macnab (F), Education Architectural Offices, Bath-st., Glasgow.

Glasgow.—Plans have been approved for alterations and additions for The Albert Ballrooms, Bath-st. Architects, Robert J. Walker & Smith (F&A), 180, West Regent-st., Glasgow.

Kincardineshire.—CC has had plans prepared for approved scheme of 50 houses at Cove Bay site. County A. Alexander Sturrock (F), Master of Works Offices, Council Offices, Stonehaven, Kincardine.

Lanarkshire.—Plans have been approved for masonic halls at the junction of the Old Edinburgh and Holmbrae-rds., Tannockside. Architect, John L. Crawford, 479, Old Edinburgh-rd., Tannockside.

Lanarkshire.—Plans have been approved for commercial garage, etc., for Laird-Porse Fisheries, Ltd., Noston, at a Noston site, East Kilbride. Architect, Baron Bercott (F.), 118, Blythswood-st., Glasgow.

Lanarkshire.—Plans have been approved for substation at Louden & Russell's, Ltd., Fireclay Works, Allerton. Architects, Cullen, Lochhead and Brown (F), 119, Cadzow-st., Hamilton West.

Sauchie.—Plans are in hand for 102 houses at the Post Hill development site. Architect, J. Austen Bent (A), 15, Palmerston-pl., Westend, Edinburgh.

The Builder

FUTURE CONSTRUCTION

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

JUNE 14.

***†Smethwick CBC.**—Extension, " Hill Crest " Old People's Home, Littlemoor Hill. BE&S. Dep. £2 2s. Tenders by July 7.

***†Stratford-upon-Avon TC.**—32 flats in blocks of eight and 20 houses at Redlands housing estate. BE&S, Municipal Offices. Dep. £2 2s.

JUNE 15.

***†Leeds Reg. Hosp. Bd.**—Extensions, Westwood Hospital, Beverley. Architect to the Board, Park-par., Harrogate. Dep. £2 2s.

***†Southampton CBC.**—Alterations and internal re-decorations at Freemantle C. of E. Sch. Boro' A, Civic Centre. Dep. £1. Tenders by July 11.

JUNE 17.

***†Southampton BC.**—Extensions to staff quarters at Shirley Warren Jun. Sch. Boro' A. Dep. £1. Tenders by July 11.

***†Wandsworth BC.**—45 flats, Wendelsworth estate. TC.

JUNE 18.

***†Essex CC.** — Adaptations at " Aberffraw," Loughton. (Approximate cost, £3,900.) County A.

***†Essex CC.**—Erection of Health Services Clinic at Oxlow-la., Dagenham (est. cost £20,000). County A.

***†Essex CC.**—(a) Erection of ambulance station at Gorsebrook-rd., Dagenham; (b) erection of ambulance station and control at Aldborough-rd., Ilford. Approx. values (a) £32,000, and (b) £37,000. County A.

***†Penge UDC.**—93 dwellings. P. J. Bunting, Clerk.

***†Plymouth TC.**—Erection of (a) two shops, one flat, one maisonette and two garages at junction of Norwich-ave. and Oakham-rd., Whitleigh; (b) Highbury, Tavistock-rd., Peverell, alterations and conversion into Mental Health Occupation Centre. City A, Seymour-rd. Dep. £3 3s. each scheme.

JUNE 20.

***Wallasey CBC.**—Erection of Lingham Jun. Sch. Major portion of superstructure will be carried out in the " Derwent " System by Vic. Hallam, Ltd. Boro' A, Town Hall. Dep. £1 1s.

JUNE 22.

***†West Sussex CC.**—(1) Erection of 3 F.E. Sec. Mod. Sch. at Depot-rd., Horsham. Superstructure will be prefabricated and erected by selected specialist firm. (Job No. 4064.) (2) Erection of 3 F.E. Sec. Mod. Sch. at Hill-rd., Littlehampton, brick construction. (Job No. 4083.) County A, County Hall, Chichester.

JUNE 24.

***Luton TC.**—(a) Erection of two houses and ancillary works at junction of Trent-rd. and Solway-rd.; (b) minor alterations to Denbigh-rd. Sch. BE, Town Hall. Dep. £2 2s. each contract. Tenders for (a) by June 24 and (b) by June 28.

***Worcester TC.**—Contract No. 1, 24 houses; contract No. 2, 30 houses at Warndon housing estate. City E, 22, Bridge-st. Dep. £3 3s. each contract. Tenders for contract No. 1 by June 24 and contract No. 2 by June 30.

JUNE 27.

***†Suffolk and Ipswich Fire Authority.**—Erection of fire station at Elmswell. E. J. Symcox, FRIBA, County Hall, Ipswich. Dep. £2 2s. Tenders by July 12.

***†West Sussex CC.**—Central library, North-st., Horsham. County A, Chichester.

JUNE 28.

***Glasgow Corpn.**—Erection of two double and four single shops and eight maisonettes at Kyleakin-rd., Arden. Architectural and Planning Dept., 20, Trongate.

JUNE 30.

***Barnes BC.**—Additions to Palewell Fields sports pavilion, East Sheen, SW14. BE&S.

***Wanstead and Woodford BC.**—Extension to committee room at municipal offices. BE. Dep. £2 2s.

JULY 4.

***Preston TC.**—Alterations and extensions at Maitland-st. Domestic Science Centre, BE&S.

JULY 6.

***Taunton TC.**—Parish of Bishops Hull. Erection of entrance gates and walls, lodge and superintendent's office at Cemetery, Wellington-rd. BE&S, St. Paul's House.

JULY 8.

***Southend-on-Sea CBC.**—Alterations and extensions, fire station, Elm-rd., Leigh-on-Sea. Boro' A, 30, Alexandra-st. Dep. £2.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

JUNE 20.

***Twickenham BC.**—Improvements to sanitary accommodation, Percy-rd. primary school, Hampton. BE&S.

JUNE 27.

***Braintree and Docking UDC.**—External painting of 191 traditional and 108 BISF houses in 14 contracts on various sites. E&S, Town Hall. Dep. £1 1s.

***Twickenham TC.**—Internal decorating at Trafalgar JM Sch. and Whitton C. of E. Boys' Sch. BE&S.

***Twickenham BC.**—External painting school buildings. BE&S.

JULY 1.

***Richmond (Surrey) TC.**—External painting and minor repairs to 152 houses at Ham estate. BE&S. Dep. £2 2s.

JULY 11.

***Welsh Joint Ed. Com.**—External redecoration of Neuadd Llewelyn. Deputy Clerk to the Governors, County Hall, Llandrindod Wells, Radnorshire. Dep. £1 1s.

JULY 12.

***Leeds City C.**—Oil-fired low-pressure steam installation and ancillary equipment at Central Horticultural Nurseries at Red Hall, Shadwell. Director of Works, Sweet-st.

ROADS, SEWERAGE AND WATER WORKS

JUNE 20.

***Twickenham BC.**—Repair and resurfacing works to school playgrounds. BE&S.

JUNE 24.

†Horsham RDC.—About 4,100 yds. sewers and sewage disposal works and pumping station at Slinfold, contract No. 11. H. Humphreys & Sons, engineers, Victoria Station House, Victoria-st., Westminster, SW1. Dep. £3 3s. Tenders by July 1.

JULY 1.

Keighley BC.—Steel-girder swing bridge (hand operated), together with sheet piling and concrete foundations. BE&S. Dep. £4 4s.

JULY 4.

Stockton-on-Tees BC.—Roads and sewers at Hardwick housing estate. BE. Dep. £5 5s.

JULY 8.

East Dene RDC.—Laying 2¼ miles of spun-iron mains and construction of r.c. break pressure tank, etc. Lemon & Blizard, Castle-la., Southampton. Dep. £2 2s.

GENERAL BUILDING WORK

(LONDON)

Camberwell.—PAINTING.—The South East Metropolitan Regional Hospital Board has given approval to the external painting of St. Francis Hospital, Dulwich, at an estimated cost of £5,000.

Carshalton. — APPOINTMENT. — The South West Metropolitan Regional Hospital Board has approved the appointment of George Low, architect, 4, High-st., Croydon, and Kenneth Barber, quantity surveyor, 945, Brighton-rd., Purley, for the proposed extension of the pathological laboratory at Queen Mary's Hospital for Children.

Chessington.—SCHOOL EXTENSIONS.—The erection of a servery and two dining-rooms at Moor-la. cty. sec. sch., at an estimated cost of £7,768, has been approved by CC for inclusion in the 1955-56 major building programme.

Chingford.—OFFICES.—The erection of an office block at The Ridgeway, at an estimated cost of £75,000, has been proposed by TC. The architects for the scheme are Tooley and Foster, Midland Bank-chbrs., Buckhurst Hill.

Dartford.—LICENSED PREMISES.—The provisional layout of three sites for licensed premises on the Temple Hill estate has been approved by Hsg. Com.

Dartford.—HOSPITAL MODERNISATION.—The submission to MH&LG for approval of phase 2 of the modernisation of Darenth Park Hospital has been approved by the South East Metropolitan Regional Hospital Board. The estimated cost of the scheme is £58,000.

Ealing.—PUBLIC HALL.—Proposals for the erection of a large public hall at Greenford have been made by TC.

Epsom and Ewell.—SCHOOL EXTENSIONS.—The inclusion in the 1955-56 major building programme of the erection of two additional classrooms and two practical rooms, kitchen and dining-room, at the Glyn cty. sec. sch. has been approved by CC. The estimated cost of the scheme is £40,132.

Kingston.—CLASSROOMS.—The erection of two additional classrooms with cloakroom at Kingsnympton cty. prim. sch. at an estimated cost of £8,793, has been approved by CC for inclusion in the 1955-56 major building programme.

Lewisham.—HOSPITAL EXTENSIONS.—The extension of the receiving and dispatch rooms at Park Hospital laundry and the transfer of laundry plant from Grove Park Hospital has been approved by the South East Metropolitan Regional Hospital Board. The scheme has an estimated cost of £9,450.

Leyton.—FACTORY ADDITIONS.—By-law approval has been given to proposals by D. Smith & Son, Ltd., for the erection of additions to their factory at No. 97, Lea Bridge-rd., E10.

Mitcham.—APPOINTMENT.—The appointment of J. Roger Preston and Ptnrs., consulting E, Malet-st., WC1, for the construction of a new chest clinic at Cumberland Hospital, Whitford-gdns., has been approved by the South West Metropolitan Regional Hospital Board.

Purley.—CHEST CLINIC.—The provision of a chest clinic at Purley and District War Memorial Hospital, Brighton-rd., has been approved by the South West Metropolitan Board.

Richmond. — APPOINTMENT. — The South West Metropolitan Regional Hospital Board has approved the appointment of Hannett and Norton, architects, 24, Sackville-st., W1; E. R. Babbs & Sons, quantity surveyors, 187, Piccadilly, W1; and A. W. D. Marshall and Ptnrs., structural consultants, 167, Victoria-st., SW1, for the development of the Royal Hospital, Kew Foot-rd.

Woolwich.—FLATS.—MH&LG has approved proposals by MBC for the erection of 42 flats by direct labour on the Coldharbour estate, at an estimated cost of £59,391.

(PROVINCIAL)

Atcham.—RDC propose erection of 16 houses for aged people at Pontesbury.

Barnsley.—West Riding CC approved amended scheme for Stage 2 of extensions at Barnsley Mining and Technical College, £64,686 est. Architects, Lyons & Israel, London.

Berwick.—TC approved scheme to restore Town Hall, est. cost £25,000. Plans by BS.

Billingham-on-Tees.—Plans approved for proposed £100,000 apprentices training school in Belasis-la. for Imperial Chemical Industries, Ltd.; also three-storey structure for manufacture of " Perspex " sheets, for same company.—British Titan Products, Ltd., are to build rutile warehouse.—G. P. Stainsby, 57, High-st., Stockton-on-Tees, prepared outline plans for proposed shops at The Green for H. Cohen.—UDC to allocate contracts for erection of 76 houses on Roseberry Estate (No. 8, Section 3) among builders already working for the council.

Birkenhead.—TC propose erection of 27 flats on site at Edgerton Park, Rock Ferry, £40,300 est.

Birmingham.—EC appointed B. C. S. Underhill 9, Newhall-st., Birmingham, as A for extensions to Greystone Prim. Sch., and Hickton, Madeley & Salt, Ashley House, Hatherton-rd. as A for improved accommodation at Bordsley Green Girls' Mod. Sch. Appointed Crouch, Butler & Savage, 67a, New-st., Birmingham, as A for adaptations at Birmingham Athletic Institute.—YWCA propose erection of central premises at corner Bristol-rd./Stone-rd., £75,000 est.—Reg. Hosp. Board, 10, Augustus-rd., Birmingham, seek Min. approval for following major building schemes: Completion to 1,000 beds of Lea Castle, MD Colony, Kidderminster; outpatient department, casualty and admission department and X-ray department at Selly Oak: outpatient, accident and casualty department, fracture clinic and two ward units at North Staggs. Royal Infirmary, Stoke -on-Trent: Rebuilding further five-ward block, central kitchens, records department, admin. offices, children's cubicle block, resident surgeon quarters and concert hall at Robert Jones & Dame Agnes Hunt Orthopaedic Hosp., Oswestry; additional 5 villas at Chelmsley MD Hosp., Marston Green; new outpatients, casualty department and adaptation works at Dudley-rd. Hosp.

Blyth.—TC approved building of 14 houses in Coomassie-rd. Plans by BE, D. W. Foster.

Bolton.—TC approved plans, 63 dwellings and 6 shops off Wasdale-ave., Breightmet Neighbourhood

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Unit; 22 bungalows at Moss Bank Way, Johnson Fold Estate, and 22 bungalows at Yewdale Gardens, Breightmet Neighbourhood Unit.

Brodsworth (Yorks).—West Riding CC propose erection of aged persons' hostel off Barnsley-rd., £38,320 est.

Broomgrove.—Inquiry held into proposal by Mr. Jabez Bridgman to demolish Townsend Mill, 166, Birmingham-rd., Norton, and erection of garage and petrol station.

Bury.—The Trustees of St. James, Woolfold, propose erection of Church Hall (Vicar, the Rev. T. J. Robertson).

Carlisle.—TC to invite tenders for 22 bungalows and 16 flats at Morton. Approved plans, erection of new building for County Garage Co., Ltd.; offices and loading dock at London-rd. for Cavenagh & Gray, Ltd., Architects, Johnston & Wright, Castle-st., Carlisle; erection of transport depot at Durranhill Industrial Estate for W. Gibson & Son.

Chadderton.—UDC approved plans for 55 houses at top of Chestnut-st. for Craftsman Houses, Ltd.

Corby.—Congregational Auths. propose erection of church. Architects, Talbot Brown, Panter & Ptnrs., Wellingsborough.

Cudworth.—Samuel Smiths Brewery Co., Ltd., Old Brewery, Tadcaster, propose erection of hotel at junction of Darfield-rd./Ibbott-st.

Easington (Co. Durham).—G. T. Brown & Son A, 53, Fawcett-st., Sunderland, preparing plans for proposed new estate at Seaton, for A. N. Eade. About 240 houses planned on three sites.

Ellesmere (Salop).—RDC approved sketch plans for 6 aged persons' bungalows at Nesscliffe.

Glossop.—BC propose erection of 9 houses and 24 flats at Newshaw-la., Bankbottom, Chapel-la. and Sheffield-rd. A, J. E. Beardshaw & Ptnrs., 186, Oxford-rd., Manchester.

Haydock.—Thomas Crompton & Sons, Ltd., Ashton in Makerfield, propose erection of factory at Kilbuck-la. Consulting E, C. S. Allett & Son, North-par., St. Mary's Parsonage, Manchester.

Hebburn-on-Tyne.—UDC to build 10 shops and flats on Monkton-la. estate by contract. Plans by S, H. C. Bestow.

Hexham.—RDC to build 12 houses at Barrasford. Plans by W. Dixon & Son, 1, Collingwood-st., Newcastle-on-Tyne.

Huyton.—Bents Brewery Co., Ltd., propose erection of hotel at junction of Longview-dr./Wallace-dr. A, Sir A. E. Shennan & Ptnrs., North John-st., Liverpool.

Hyde.—BC approved plans: 4 houses and 2 shops at Cheetham Fold Estate. Seek loan £50,475 for 33 houses at Grange-rd. Estate.

Keighley.—TC approved plans for 40 houses and 8 Cornish Unit flats at Braithwaite Estate, and 52 Cornish Unit flats at West-la. Estate.

Kirkburton.—UDC propose erection of 24 houses at Parkside, Flockton.

Longeaton.—Wallace & Co. (Longeaton), Ltd., propose erection of factory at Nottingham-rd. Plans by J. W. Wilcox, 2, Waverley-st.

Manchester.—TC approved plans erection of office block with ground floor shops and petrol filling station and basement garage at corner Oxford-st./Lower Mosley-st. for W. Bernstein. A, Ansell & Bailey, 12, Gray's Inn-sq., WC1.

Mansfield.—BC to invite tenders for 42 traditional houses in site SE at Ladybrook Estate. BS to submit designs for erection of flats of type similar to those in course of erection at Ladybrook Estate.

Marple.—Committee of Marple Welfare Inf. Centre propose erection of new health centre this year.

Middlesbrough.—TC to convert "Southend" into old people's hostel, for 34 residents and four staff. BE prepared sketch plans, submitted to Ministry for consideration.

Middlesbrough.—Work to start shortly on construction of new St. Chad's Church, cost about £25,000. Architect, S. E. Sykes Bower, Quendon-ct., Quendon, Essex.

Morecambe.—Lancs. EC approved scheme for extensions to Balmoral-rd. Sec. Sch., £41,000 est.

Newcastle-on-Tyne.—George Angus & Co., Ltd., of Walker, have applied to Longbenton UDC for site for factory in 1956 and to reserve 50 houses for employees. UDC approved factory site for company whose As are S. Milburn & Ptnrs., The Esplanade.

Newcastle-on-Tyne.—City C approved plans for erection of 16 houses and 28 flats in three storeys at Slatyford and 24 flats and maisonettes in blocks at Byker Bank by contract. Plans by City A.

Newcastle-on-Tyne.—W. Dixon & Son, 1, Collingwood-st., preparing plans for Hexham RDC for 48 houses at Hayden Bridge and five at Hersley.

Oswestry.—RDC propose erection of 30 houses on various sites. Plans by S.

Over Wyre (nr. Preston).—C of E Auths. propose erection of sec. sch., £15,000 est.

Padiham.—UDC seek loan £22,773 for erection of 18 houses at St. Johns-rd. Estate.

Preston.—TC propose erection of disabled persons' centre at junction Deepdale-rd./Blackpool-rd., £20,000 est.

Sheffield.—Diocesan Board of Finance Church Extension Committee announced five building projects, est. cost £100,000: William Temple Church, Manor Park, Sheffield, cost £18,500; a new parsonage and church portion of dual-purpose building, cost about £19,000, at New Cantley, Doncaster; a new church at Wheatley Hills, Doncaster, £20,000; new church at Kimberworth for which plans almost completed, est. cost £25,000; and tenders been invited for new church hall on Kendary state, Ardsley. It is expected that these projects will be completed in about year.

"THE BUILDER" PRICES

CHAIN LINK FENCING.

The Chain Link Fencing Association announce that the current chain link fencing premiums have been advanced by 7½ or 8 points, according to category of purchaser, from June 6.

Sheffield.—TC to invite tenders for first section of scheme for redevelopment of Park Hill site by erection of flats. Total scheme estimated to cost £4m.

Shrewsbury.—Group Hosp. Management Com. propose erection of new Gen. Hosp. at Copthorne site.

South Shields.—EC received consent to borrow £13,402 for extensions to Mortimer-rd. Infants' Sch. and Simonside Jun. Sch., and £14,000 for school furniture and equipment. BE, J. Reid.

South Shields.—TC to erect 18 old people's bungalows at Cauldwell. TC recommended to offer sites for 64 houses in Prince Edward-rd. West, and 18 houses in King George-rd. to local builders, for erection of houses.

Stockton Heath (near Warrington).—Methodist Auths. propose erection of new Methodist Sch. Hall, £16,500 est.

Stockton-on-Tees.—Revised plans approved for proposed workshop and offices on Dod Hill Farm site for J. Shouksmith & Son, Ltd., plumbers, Micklegate, York. Architects, Biscomb & Ferrey, 12, Minster-yd., York.—Plans by Cordingley and McIntyre, The College, Durham, for proposed Anglican Church in Ragpath-la. been approved.—Durham CC to erect six police houses at Norton to plans by County A, Court-la., Durham.—Kitching & Co., 21, Albert-rd., Middlesbrough, architects for proposed rebuilding of shops and offices in High-st. for Blackburn & Co.

Sunderland.—Erection of 20 houses in Barnes Park-rd.: Gordon Bell, Ltd., Viewforth-ter., Sunderland.

Sunderland.—It is expected that work will begin soon on erection of club premises for Pennywell Working Men's Club, cost £23,000. No contracts let. A, J. M. Angus, 21, Lovaine-pl., Newcastle-on-Tyne.

Sunderland.—Matkin & Hawkins, Barclays Bank-chmbs., Fawcett-st., prepared plans for houses in Leominster-rd. for J. Prentice, builder.—Hunter & Son, Ltd., builders, Deptford, to erect houses in Sidecliff-rd. and Whitburn-rd. to plans by G. T. Brown & Son, 53, Fawcett-st. G. T. Brown & Son also prepared preliminary plans for housing developments on Bainbridge Holme Estate for R. L. S. Pemberton, of Sunderland.

Wakefield.—TC propose adaptation of premises at 68, Batley-rd. as clinic and child welfare centre.

Wallsend.—TC approved proposed school sites on Low Willington Farm Estate for Northumberland EC. County A, C. C. Brown, County Hall, Newcastle-on-Tyne.

Wigan.—Trustees of First Church of Christ Scientist propose erection of new church fronting Station-rd. and rear of 50-52, Millgate. Inquiry held.

TENDERS

* Denotes *accepted*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government Departments.*

Aberdeen.—Shops for the Northern Co-operative Soc., Ltd., Loch-st. Architects, Tawse & Allan, 9, Bon Accord-cres., Union-st., Aberdeen: *Alexander Hall & Son (Aberdeen), Ltd., Northfield Contracting Works, Granitehill-rd., Aberdeen.

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Birmingham.—Washwood Heath Mixed Modern School for EC: *Geo. Wimpey & Co., Ltd., London, £178,150.

Cheadle & Gatley.—187 dwellings at the Turves-rd. Estate for UDC: *Vessey, Ltd., Marple, £249,437.

Corby.—Police station at Corby for Northants CC: *Robert Marriott, Ltd., Higham-rd., Rushden.

Durham.—Erection of blind persons' hostel at Durham City for Durham CC. County A, G. R. Clayton, Court-la., Durham: *Bell & Ridley, Ltd., North-rd., Durham, £43,960.

Edinburgh.—Plans have been approved for the new printing and manufacturing works for William Thyne, Ltd., at the Sighthill Industrial Estate, Bankhead-dr. site. Architects, Wylie Shanks & Wylie (FA), Claremont-cres., Sauchiehall-st., Charing Cross. Quantity Surveyors, James Barr & Son, 213, St. Vincent-st., Glasgow: *W. & J. Watson & Co., Ltd., 81, Great King-st., Edinburgh. £416,000.

Great Yarmouth.—Erection of girls' high school, Gorleston, for CBC. Architect, F. Jackson, ARIBA. Quantities by Philip Pank & Ptnrs.

E. Moore & Son, Ltd., Great Yarmouth ..	£156,988
R. G. Carter, Ltd., Great Yarmouth ..	154,777
Bush Builders, Ltd., Norwich	154,100
*H. A. Holmes & Sons, Ltd., South Icehouse Hill, Gorleston	153,684

Lancs.—Erection of following schools for CC:—Worsley Wardley Grammar Technical: *J. Jarvis & Sons, Ltd., Dane-rd., Sale, Cheshire, £155,000. Denton Two Trees County Secondary: *George Moss & Sons, Ltd., Pennington Sawmills, Leigh, Lancs, £118,122. Padgate County Secondary: *George Moss & Sons, Ltd., Leigh, £114,658. Knowsley Woolfall County Secondary: *Unit Construction Co., Ltd., Speke Boulevard, Liverpool, £106,512. Huyton with Roby Albert Hambleton Day Special School: *W. Hall & Son, Ltd., 60, Christian-st., Liverpool 3, £39,542. Worsley Day Special: *J. Jarvis & Sons, Ltd., £39,200.

¶London (Admiralty).—Particulars of contracts:—*Somerset*: Heating and hot water systems, E. R. Carter, West Hendford, Yeovil. *Kent*: Internal and external painting, W. Herd & Co., 88, Baker-st., W1; erection of lighting columns, W. H. Bensted & Son, Ltd., Coombe Quarries, Maidstone, Kent. *Hants*: Construction of roads and paved areas, Roads Reconstruction (1934), Ltd., Stoneleigh House, Frome, Somerset.

London (Metropolitan Police).—Results of tenders for Metropolitan Police building works:—*Ext. painting, etc.*, Kings Cross-road police station, A. Black & Son, £629; *Amelioration of Stn. Lav.*, Kings Cross-road police station, W. T. Ricketts & Sons, Ltd., £723; *Ext. painting, etc.*, Clerkenwell Mag. Court, C. E. Wilkinson, Ltd., £777; *Ext. painting*, Marlborough-st., Mag. Court, Websters, Ltd., £875; *Ext. and Int. redec.*, 132/140, Maybank-rd., Woodford, E. Bull & Son, £499; *Ext. paint and repairs*, Bde House, Mare-st., W. T. Ricketts & Son, £1,533; *Ext. and Int. redec.*, Eltham New police station, Halse & Sons, Ltd., £1,479; *Erection of 24 MQs*, Queens-walk, Ealing, J. Lawson & Co., £48,563; *Erection of 16 Flats*, Clifton-gardens, Paddington, Y. J. Lovell & Sons, Ltd., £49,968; *Int. redec (partial)*, 256-266, Amhurst-rd., Hackney, G. Butters & Sons, £554; *Ext. painting, etc.*, Paddington police station, Websters, Ltd., £830.

¶London (MoW).—Contracts placed by Ministry of Works for week ending May 21:—*Hampshire*: IRO, Crown-chbrs., Richmond Hill, Bournemouth, alterations, J. Carter & Sons, West-rd., Boscombe East, Bournemouth; WD Labour Camp, Tidworth, reinstatement, A. J. Dunning (Weyhill), Ltd., Weyhill, Hants. *London*: Gilray House, 150, City-rd., EC, adaptations to form HQ training school, M. J. Gleeson (Contrs.), Ltd., Haredon House, London-rd., North Cheam, Surrey; Parliament-sq., SW1, erection of statue pedestal for Field-Marshal Smuts and alteration to walling, Holliday & Greenwood, Ltd., 11, Buckingham Palace-gdns., SW1; St. Giles Court, St. Giles High-st., WC2, internal decorations, Howe & White, Ltd., 35, Manor-rd., Wallington, Surrey. *Renfrewshire*: Post Office, Greenock, alterations to refreshment club, W. H. Kirkwood, Ltd., 45, Dalrymple-st., Greenock; NAB, Dyers Hall, Paisley, adaptations for permanent scheme, Woodcraft (Regd.), 64, Espedair-st., Paisley.

¶London (MoW).—Contracts placed by Ministry of Works for week ending May 28:—*Durham*: JOB, St. Bede's School, Sunderland-rd., adaptations, T. E. Graham & Son, Paul's-rd., Tatham-st., Sunderland. *Glamorganshire*: HPO, Westgate-st., Cardiff, alterations to portions of basement, ground and decorations, mezzanine and first floor, J. A. Crone, Ltd., 10a, St. Peter-st., Cardiff. *Isle of Wight*: CG Station, Totland, provision of bathrooms, Westridge (Construction) Co., Ltd., 86, High-st., Ryde, IoW.

¶London (War Dept.).—Contracts placed by War Dept. for week ended May 28:—*Berkshire*: Roofing work, William Hartley & Sons, Slough; provision and installation of electric cranes, The Vaughan Crane Co., Ltd., Manchester. *Essex*: Painting, T. H. Kenyon & Sons, Ltd., London. *Flintshire*: Miscellaneous, Allan Wilson, Rhyl. *Hampshire*: Building work, Cortis & Hankins, Ltd., Portsmouth; building work, A. J. Dunning & Sons (Weyhill), Ltd., Weyhill. *Kent*: Roadwork, Val de Travers Asphalte Paving Co., Ltd., London. *Norfolk*: Miscellaneous, George Greengrass, Ltd., North Walsham. *Northumberland*: Building work, Thomas Muckle & Sons, Rothbury. *Shropshire*: Miscellaneous, Bertram E. Pugh & Son, Pontesbury. *Staffordshire*: Miscellaneous, O'Dair Bros., Ltd., Stoke-on-Trent. *Suffolk*: Provision of steel groynes, W. & C. French, Ltd., Buckhurst Hill. *Surrey*: Painting and decorating, T. H. Kenyon & Sons, Ltd., London. *Worcester-*

shire: Roadwork, Val de Travers Asphalte Paving Co., Ltd., Birmingham; building work, T. Oliver (Builders), Ltd., Worcester.

Mexborough.—106 dwellings at the Highwood Estate for UDC: *G. H. Smickersgill, Ltd., Sandymount-rd., Wath-on-Dearne, Yorks.

Middlesbrough.—42 houses on the Pallister Park housing estate for the TC. Boro' E, J. A. Kenyon: *Middlesbrough and District Building Trades Association. £53,904.

Middlesbrough.—Alterations and additions to club in Westbourne-gr. for North Ormesby and District Working Men's Club and Institute: *F. A. Gall, 5, Macnay-st., Saltburn.

Middlesbrough.—Erection of commercial garage in Redcar-st., and Lower Gosford-st. for E. Dent: *J. H. Crawford & Son, Ltd., Back Hutton-rd., Longlands, Middlesbrough.

Middlesbrough.—72 houses at Park End for the TC: *Direct labour.

Middlesbrough.—84 non-traditional and eight traditional houses in the St. Hilda's redevelopment area for the TC. Boro' E, J. A. Kenyon: *George Wimpey & Co., Ltd., Orchard House, Newcastle-on-Tyne.

Nantwich.—4 bungalows at Wrenbury and 8 at Wistaston for RDC: *Joseph Finney & Sons, Ltd., Ribblesdale-st., Winsford.

Norton.—6 houses, 1 shop and 2 bungalows at Duggleby for RDC: *F. H. Calam, £11,242.

Nottingham.—Extensions to offices at Perry-rd. for Bairns Wear, Ltd.: *Allcock & Sisson, Ltd., Hill Top, Eastwood, Notts.

Penrith.—100 houses, roads and sewers, for UDC: *Thomas Armstrong, Ltd., Cockermouth, £157,024.

Plymouth.—Public conveniences, Armada-way. Architect, Mervyn K. Reiss-Smith, LRIBA, AIAA, 31, Athenaeum-st., The Hoe, Plymouth. Surveyor, W. T. Hills & Co., 12, Princess-sq., Plymouth. *A. N. Coles (Contractors), Ltd., Sutton-rd., Plymouth, £42,860.

Portsmouth.—Old people's home, Flint House, Drayton, for City C. City A, Portsmouth. Quantities by City A's department: *J. R. Basford & Sons, Ltd., "Northwoods," Fareham-rd., Gosport, £33,259.

Portsmouth.—Six flats, Lake-rd., for City C. City A, Portsmouth: *City E, Portsmouth, £11,565.

Preston.—Extensions and alerations at Ribbleton-ave. County Primary School for EC: *J. Whittaker & Sons (Blackburn), Ltd., Blackburn, £28,876.

Rugby.—34 houses at Brandon, Frankton, Birdingbury and Willoughby for the RDC: *Trusteel Co., Ltd., London, £52,976.

Seaton Valley (Northumberland).—Alterations and additions to Seaton Terrace Club. Architect, J. M. Angus, 21, Lovaine-pl., Newcastle-on-Tyne: *R. W. Bell & Co. (Builders), Ltd., Mistletoe-rd., Newcastle-on-Tyne.

Sheffield.—16 houses at Barnsley-rd and Calderway for TC: *Ackroyd & Abbott, Ltd., 47, Willoughby-st., Sheffield, £20,229.

Stanley (Co. Durham).—103 houses for the UDC: *Thomas Armstrong, Ltd., Cockermouth, Cumberland.

Sunderland.—Additions to Fulwell Workmen's Club, Station-rd., Sunderland. Architects: Newrick & Blackbell, 58, John-st., Sunderland: *D. & J. Ranken, Ltd., Stockton-rd., Sunderland.

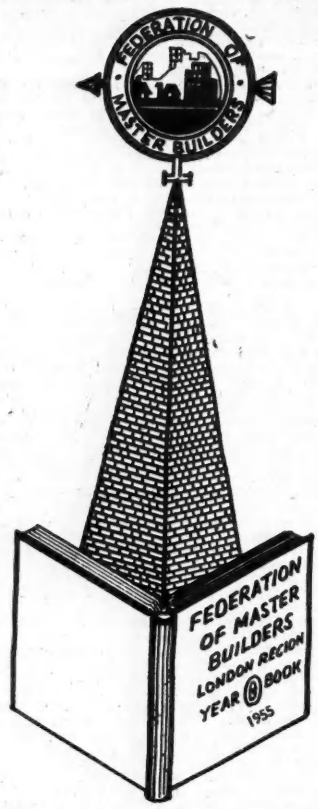
Sunderland.—Alterations and additions to the Scotia Depot, High-st., for Steels of Sunderland, builders' merchants. Architects, Newrick & Blackbell, 58, John-st., Sunderland: *Randle & Co., Back Dunelm, Sunderland.

Wem (Salop).—30 houses at Manor Plate site for RDC: *Allman Bros., Ltd., Lower-green, Newcastle, Staffs, £42,793.

Wolverhampton.—Large extensions to printing works at Queen-st. for Midland News Association, Ltd.: *A. F. R. Godfrey & Co., Ltd., 46, Waterloo-st., Wolverhampton.

Workington.—Alterations to the Albion Inn at Church-st.: *W. A. Walker & Sons, Croft House, Elizabeth-st., Workington.

Worksop.—6 shops, maisonettes, flats and garages at Kilton Estate for TC: *J. H. & W. E. Illett, Ltd., Dock-rd., Worksop.



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